PATTON®
let's Connect!™

Model 3124
ADSL2+ IpDSLAM

Administrator's Reference Guide

Sales Office: **+1 (301) 975-1000**
Technical Support: **+1 (301) 975-1007**
E-mail: **support@patton.com**
WWW: **www.patton.com**

Part Number: **07M3124-ARG, Rev. A**
Revised: **March 16, 2012**

Patton Electronics Company, Inc.
7622 Rickenbacker Drive
Gaithersburg, MD 20879 USA
tel: +1 (301) 975-1000
fax: +1 (301) 869-9293
support: +1 (301) 975-1007
web: www.patton.com
e-mail: support@patton.com

Copyright
Copyright © 2012, Patton Electronics Company. All rights reserved.

Notice
The information in this document is subject to change without notice. Patton Electronics assumes no liability for errors that may appear in this document.

The software described in this document is furnished under a license and may be used or copied only in accordance with the terms of such license.

Summary Table of Contents

1 Getting Started 4
2 System Configuration 12
3 Bridge Configuration 27
4 ADSL Configuration 77
5 Traffic Configuration 94
6 SNMP Configuration 98
7 Maintenance 102
8 Contacting Patton for assistance 131
A Abbreviations 134

Table of Contents

Audience 3
Structure 3

1 Getting Started 4
Overview 5
Getting Started with the WMI 5
Accessing the WMI 5
Logging in to the WMI 5
WMI Overview 6
Operating Examples 9

2 System Configuration 12
System Information 13
Board IP Setup 14
Ethernet Port Service 15
ADSL Port Service 16
CLI Setup 17
Cluster Setup 18
System Inventory 21
System Contact Info 21
SNTP 22
IP Routes 23
User Administration 24
Duplicator 26

3 Bridge Configuration 27
Interface Setup 29
GIGA Bridge 29
ADSL PVC 30
ADSL Bridge 31
ADSL Port Security 33
802.1x Security Setup 34
System Protocol 34
Main Setting 34
Timer Setting 36
RADIUS & Local Profile 37
VLAN Configuration 38
Static VLAN 38
CONFIG VLAN 38
SHOW VLAN 38
Protocol Base VLAN 39
Translation VLAN 39

1:1 VLAN (including 1:1 User Mode and C_VLAN Stacking Replaced Mode) 40
N:1 VLAN (N:1 User Mode) 41
Static Allowed IP 41
MAC Spoofing 42
Access Control 43
Filtering 43
Protocol Filtering 43
Source MAC Filtering 44
IP Address Filtering 45
Layer 4 Destination Port Filtering 45
Destination IP Filtering 46
Destination MAC Filtering 47
Ether Type Filtering 48
VLAN Priority Remark 49
TOS 49
IP Source 50
IP Destination 51
MAC Source 52
MAC Destination 53
VLAN ID 54
VLAN Priority Regeneration 55
Differentiated Services 56
Protocol 57
Ether Type 58
Rate Limit 59
Rate Limit Broadcast 59
Rate Limit Flooding 60
Rate Limit Policer 60
Rate Limit Policer Binding Table 62
Three Color Marking Policer 62
Priority Queue Mapping 64
Forwarding 65
TP Forwarding DB 65
Forwarding Static 66
Relay 67
DSL Line Identify 67
IGMP 69
IGMP Protocol & Router Port 69
IGMP Profile 71
IGMP Multicast 73
List by Number 73
List by VID & Group IP 74
IGMP Source 74
IPOA 75

BRAS MAC 75
Interface Setup 76

4 ADSL Configuration 77
Profile....78
Line Service Profile 78
Service Channel Profile 79
Spectrum Main Profile 80
Spectrum ADSLx Profile 83
ADSL TCA Profile 84
Data & Inventory....85
Inventory 85
Loop Test 86
Test in progress 86
Test completed 86
Carrier Data 90
OP Data 91
Line Operational Data 91
Channel Operational Data 91
Line Config & Info 92
Line Configuration 92
Line Information 93

5 Traffic Configuration 94
ATM Traffic Descriptor....95

6 SNMP Configuration 98
SNMP Community....99
SNMP Target....100
SNMP Notify....101

7 Maintenance 102
SYS Log Server 103
Database....104
(A) Import File (Write Download Config To Flash) 105
(B) Import File (Load Remote Config to Running Config) 106
(C) Export File (Put Running Config to Remote TFTP Server) 107
(D) Save Running Config to Flash (System Config) 108
(E) Reload Flash to Running Config 109
(F) Restore Factory Default 110
(G) Flash Boot Point Configuration Select 111
Firmware Update....112
ATM Loopbacks....114
Fault Management 115
Alarm/Event 115
Current Alarm 115

History Alarm 115
Event Log 116
Alarm Profile 117
Hardware Temperature 118
Performance Monitoring 119
System Utilization 119
Ethernet Statistics 119
GBE Interface 119
ADSL Line PVC 120
ATM Statistics 120
RMON 121
ETH Statistics 121
History Control 123
ETH History 124
Alarm 126
Event 128
LOG 128
ADSL Day/Interval 129

8 Contacting Patton for assistance 131
Introduction 132
Contact information 132
Warranty Service and Returned Merchandise Authorizations (RMAs) 132
Warranty coverage 132
Out-of-warranty service 132
Returns for credit 132
Return for credit policy 133
RMA numbers 133
Shipping instructions 133

A Abbreviations 134
Abbreviations 135

List of Figures

1 WMI login screen . . . 6
2 WMI screen description . . . 6
3 Navigating the ADSL PVC Setup page . . . 9
4 Navigating the IP Routes page . . . 10
5 WMI Entry Fields . . . 11
6 System Information page . . . 13
7 Board IP Setup page . . . 14
8 Ethernet Port Service page . . . 15
9 ADSL Port Service page . . . 16
10 CLI Setup page . . . 17
11 Cluster network topology - Star . . . 18
12 Cluster Setup page . . . 18
13 Cluster Configuration - Discovering State . . . 19
14 Cluster Configuration - Master State . . . 19
15 Cluster Configuration - Slave State . . . 20
16 System Inventory page . . . 21
17 System Contact Info page . . . 21
18 SNTP page . . . 22
19 IP Routes page . . . 23
20 User Administration page . . . 24
21 Add New User Account . . . 25
22 Change User Password . . . 25
23 System Duplicator page . . . 26
24 GIGA Bridge page . . . 29
25 ADSL PVC page . . . 30
26 ADSL Bridge page . . . 31
27 ADSL Port Security page . . . 33
28 802.1x Diagram . . . 34
29 802.1x System Protcol - Main Setting page . . . 34
30 802.1x System Protcol - Timer Setting page . . . 36
31 RADIUS & Local Setup page . . . 37
32 Static VLAN - CONFIG VLAN . . . 38
33 Static VLAN - SHOW VLAN . . . 38
34 Protocol Base VLAN . . . 39
35 Translation VLAN . . . 39
36 Translation VLAN - C-Tag . . . 40
37 Translation VLAN - Replaced N:1 . . . 41
38 Static Allowed IP table . . . 41
39 MAC Spoofing page . . . 42
40 Filtering Table . . . 43
41 Protocol Filtering page . . . 43
42 Source MAC Filtering page . . . 44
43 Source IP Address Filtering page . . . 45
44 Layer 4 Destination Port Filtering page . . . 45
45 Destination IP Filtering page . . . 46
46 Destination MAC Filtering page . . . 47
47 Ether Type Filtering pages . . . 48

48 VLAN Priority Remark page . . . 49
49 VLAN TOS Priority Remark page . . . 49
50 VLAN IP Source Priority Remark page . . . 50
51 VLAN IP Destination Priority Remark page . . . 51
52 VLAN MAC Source Priority Remark page . . . 52
53 VLAN MAC Destination Priority Remark page . . . 53
54 VLAN ID Priority Remark page . . . 54
55 VLAN Priority Regeneration page . . . 55
56 VLAN DSCP Priority Remark page . . . 56
57 VLAN Protocol Priority Remark page . . . 57
58 VLAN Ether Type Priority Remark page . . . 58
59 Rate Limit page . . . 59
60 Rate Limit - Broadcast page . . . 59
61 Rate Limit - Flooding page . . . 60
62 Rate Limit - Policer page . . . 61
63 Rate Limit - Policer Binding Table . . . 62
64 Three Color Marking page . . . 63
65 Priority Queue Mapping page . . . 64
66 Transparent Forwarding Databse page . . . 65
67 Forwarding Static page . . . 66
68 DSL Line Identify . . . 67
69 IGMP Protocol & Router Port page . . . 69
70 IGMP ACL Profile . . . 71
71 IGMP Group - List by Number page . . . 73
72 IGMP Group - List by VID & Group IP page . . . 74
73 IGMP Source page . . . 74
74 IPOA BRAS MAC . . . 75
75 IPOA Interface Setup page . . . 76
76 ADSL Line Service Profile page . . . 78
77 ADSL Service Channel Profile page . . . 79
78 ADSL Spectrum Profile page . . . 80
79 ADSL Spectrum ADSLx Profile page . . . 83
80 ADSL TCA Profile page . . . 84
81 ADSL Inventory page . . . 85
82 ADSL Loop Test page . . . 86
83 ADSL Loop Test in progress . . . 86
84 ADSL Loop Test Results . . . 87
85 ADSL Loop Test Results(2) . . . 88
86 ADSL Loop Test Results(3) . . . 89
87 Carrier Data table . . . 90
88 ADSL Line Operational Data page . . . 91
89 ADSL Channel Operational Data page . . . 91
90 ADSL Line Configuration page . . . 92
91 ADSL Line Information page . . . 93
92 ATM Traffic Descriptor page . . . 95
93 SNMP Community page . . . 99
94 SNMP Target page . . . 100
95 SNMP Notify page . . . 101
96 System Log Server page . . . 103
97 Database Configuration menu . . . 104
98 Database Configuration concept . . . 104

99 Database Configuration - Import File - Get File . . . 105
100 Database Configuration - Import File - Write to Flash . . . 105
101 Database Configuration - Import File - Write Successful . . . 105
102 Database Configuration - Import File - Fail to Get File . . . 106
103 Database Configuration - Import File (Remote Config) - Get File . . . 106
104 Database Configuration - Import File (Remote Config) - Write Successful . . . 106
105 Database Configuration - Import File (Remote Config) - Write Failed . . . 107
106 Database Configuration - Export File - Put File . . . 107
107 Database Configuration - Export File - Put File Successful . . . 107
108 Database Configuration - Export File - Put File Failed . . . 107
109 Database Configuration - Save Running Config to Flash . . . 108
110 Database Configuration - Save Running Config to Flash Successful . . . 108
111 Database Configuration - Reload Flash . . . 109
112 Database Configuration - Reload Flash Successful . . . 109
113 Database Configuration - Restore Factory Default . . . 110
114 Database Configuration - Restore Factory Default Successful . . . 110
115 Database Configuration - Boot Configuration . . . 111
116 Firmware Update page . . . 112
117 Firmware Update - Flash Write In Progress . . . 113
118 Firmware Update - Flash Write Successful . . . 113
119 ATM Loopback page . . . 114
120 Current Alarm page . . . 115
121 History Alarm page . . . 115
122 Event Log page . . . 116
123 Alarm Profile page . . . 117
124 Hardware Temperature page . . . 118
125 System Utilization . . . 119
126 Ethernet Statistics - GBE Interface . . . 119
127 Ethernet Statistics - ADSL Line PVC . . . 120
128 ATM Statistics page . . . 120
129 Remote Monitoring (RMON) page . . . 121
130 Remote Monitoring - ETH Statistics . . . 122
131 Remote Monitoring - History Control . . . 123
132 Remote Monitoring - ETH History . . . 124
133 Remote Monitoring - Alarm . . . 126
134 Example: RMON Alarm for ABSOLUTE Sample Type . . . 127
135 Example: RMON Alarm for DELTA Sample Type . . . 127
136 Remote Monitoring - Event . . . 128
137 Remote Monitoring - LOG . . . 128
138 ADSL Line Performance Statistics . . . 129

List of Tables

1 WMI Page Map . . . 7
2 Board IP Setup Options . . . 14
3 Ethernet Port Options . . . 15
4 ADSL Port Options . . . 16
5 CLI Setup Options . . . 17
6 Cluster Setup Options . . . 19
7 SNTP Options . . . 22
8 IP Route Setup Options . . . 23
9 User Administration Options . . . 24
10 GIGA Bridge Options . . . 29
11 ADSL PVC Options . . . 30
12 ADSL Bridge Options . . . 32
13 ADSL Bridge Options . . . 33
14 8021.x System Protocol - Main Setting Options . . . 34
15 8021.x System Protocol - Timer Setting Options . . . 36
16 RADIUS & Local Setup Options . . . 37
17 MAC Spoofing Options . . . 42
18 Protocol Filtering Settings . . . 43
19 Source MAC Filtering Settings . . . 44
20 Source IP Address Filtering Settings . . . 45
21 Layer 4 Destination Port Filtering Settings . . . 46
22 Destination IP Filtering Settings . . . 46
23 Destination MAC Filtering Settings . . . 47
24 Ether Type Filtering Settings . . . 48
25 VLAN Priority Remark Settings - TOS . . . 49
26 VLAN Priority Remark Settings - IP Source . . . 50
27 VLAN Priority Remark Settings - IP Destination . . . 51
28 VLAN Priority Remark Settings - MAC Source . . . 52
29 VLAN Priority Remark Settings - MAC Destination . . . 53
30 VLAN Priority Remark Settings - VLAN ID . . . 54
31 VLAN Priority Remark Settings - VLAN Priority Regeneration . . . 55
32 VLAN Priority Remark Settings - Differentiated Services . . . 56
33 VLAN Priority Remark Settings - Protocol . . . 57
34 VLAN Priority Remark Settings - Ether Type . . . 58
35 Rate Limit - Broadcast Settings . . . 59
36 Rate Limit - Flooding Settings . . . 60
37 Rate Limit Policer Settings . . . 61
38 Rate Limit Policer Binding Table Settings . . . 62
39 Three Color Marking Settings . . . 63
40 Transparent Forwarding Database Settings . . . 65
41 Forwarding Static Settings . . . 66
42 DSL Line Identify Settings . . . 67
43 IGMP Router Port Settings . . . 69

44 IGMP ACL Profile - Profile Binding Settings . . . 72
45 IGMP ACL Profile - Profile Configuration . . . 72
46 IGMP Group - List by Number Settings . . . 73
47 IGMP Group - List by VID & Group IP Settings . . . 74
48 IGMP Source Settings . . . 74
49 IGMP Source Settings . . . 76
50 ADSL Line Service Profile Settings . . . 78
51 ADSL Service Channel Profile Settings . . . 79
52 ADSL Spectrum Profile Settings . . . 80
53 ADSL2 Spectrum Profile Settings . . . 83
54 ADSL TCA Profile Settings . . . 84
55 ADSL Inventory Settings . . . 85
56 ADSL Line Configuration Settings . . . 92
57 ADSL Line Information Settings . . . 93
58 ATM Traffic Settings . . . 95
59 SNMP Community Options . . . 99
60 SNMP Target Options . . . 100
61 SNMP Notify Options . . . 101
62 SYS Log Server Settings . . . 103
63 Firmware Update Options . . . 112
64 ATM Loopback Settings . . . 114
65 Current Alarm Table Description . . . 115
66 History Alarm Table Description . . . 116
67 Event Log Table Description . . . 116
68 Hardware Temperature Settings . . . 118
69 ATM Statistics . . . 120
70 RMON ETH Statistics . . . 121
71 RMON History Control . . . 123
72 RMON Eth History . . . 124
73 RMON ETH History Variables . . . 125
74 RMON Alarm Options . . . 126
75 RMON Event Options . . . 128
76 ADSL Line Performance Statistics . . . 129
77 Abbreviations . . . 135

About this guide

This user guide describes how to configure the Model 3124 system through the Web Management Interface (WMI). For detailed hardware or set-up information, refer to the product's *User Manual*.

Audience

This guide is intended for the following users:

- Operators
- Installers
- Maintenance technicians

Structure

This guide contains the following chapters and appendices:

- Chapter 1 on page 4 provides an overview about the Web Management Interface (WMI)
- Chapter 2 on page 12 provides information on setting up system features
- Chapter 3 on page 27 provides information on configuring bridge features
- Chapter 4 on page 77 provides information on configuring ADSL options
- Chapter 5 on page 94 provides information on configuring traffic options
- Chapter 6 on page 98 provides information on configuring SNMP features
- Chapter 7 on page 102 provides information on configuring maintenance features
- Chapter 8 on page 131 provides information on contacting Patton for service and support

Chapter 1 Getting Started

Chapter contents

Overview 5
Getting Started with the WMI 5
Accessing the WMI 5
Logging in to the WMI 5
WMI Overview 6
Operating Examples 9

Overview

This *Model 3124 Administrator's Reference Guide* provides information about configuring the software for the 3124 ADSL2+ IPDSLAM Module through the Web Management Interface (WMI). For information about setting up the unit, refer to the *Model 3124 User Manual* available online at **www.patton.com/manuals/3124.pdf**. For information about configuring the 3124 through the Command Line Interface (CLI), refer to the *Model 3124 CLI Reference Guide* available online at **www.patton.com/manuals/3124-cli.pdf**.

Getting Started with the WMI

Accessing the WMI

To access the Web Management Interface (WMI) for the Model 3124:

1. Connect a PC to the console port of the DSLAM. At the console, type the following CLI command:

`WDS:>enable`	Enter the **enable command mode** from initial mode.
`WDS:%show management all`	Display all in-band and out-band management IP settings.

   The default LAN IP address is retrieved via DHCP.

2. Start your web browser and enter the URL you retrieve by using the above command.

   If you need to change the accessing port number (default is 80) of the WMI, use the following CLI command (with the correct values added):

`WDS:%configure`	Enter the **configuration command mode** from enable mode.
`WDS:(conf)#http port <number>`	Set http port number.

Logging in to the WMI

Once you connect to the DSLAM, a login page displays. You must enter your username and password to access the pages. The default login username and password are as follows:

User Name: admin

Password: admin

Click on the Sign in button.

You are now ready to configure your DSLAM using the WMI.

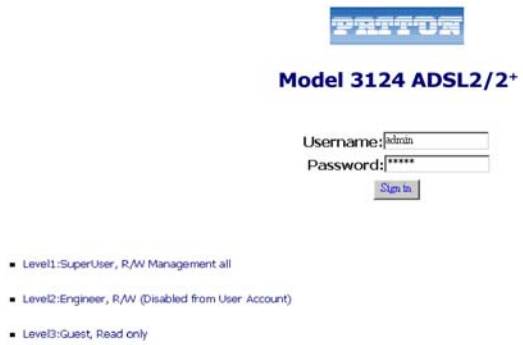


Figure 1. WMI login screen

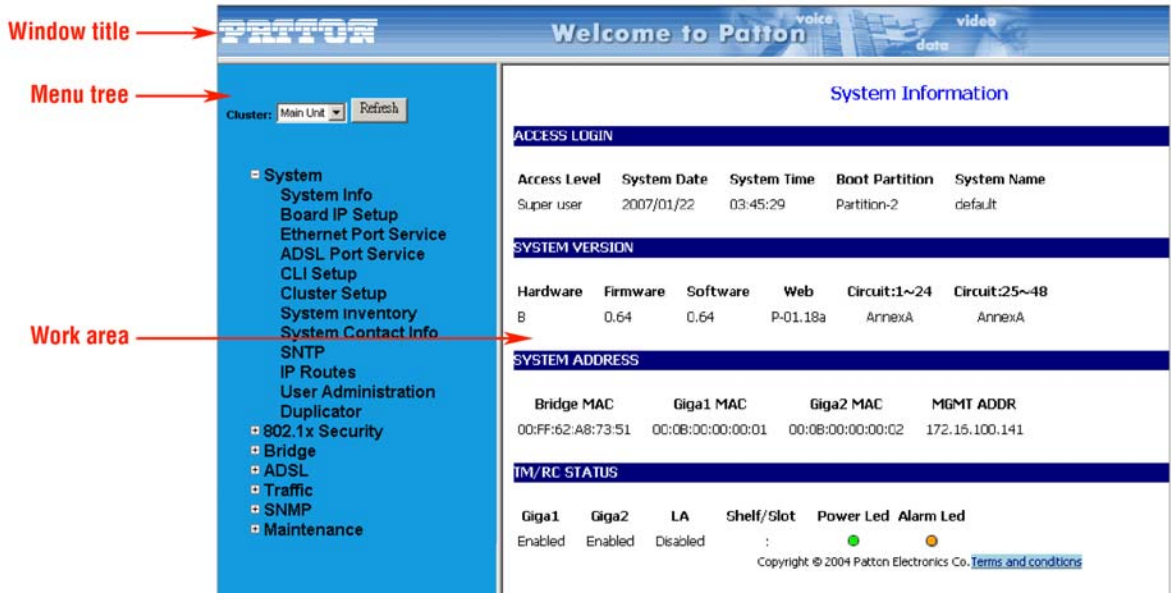


Figure 2. WMI screen description

WMI Overview

The Web Configuration Tool provides a series of web pages for users to setup and configure the Model 3124 system. These pages are organized into six main topics. You can select each of the following topics from the menu on the left-hand side of the main window:

- **System:** Information about the system, system status, basic setup of the system, CLI setup, SNTP setup, query system inventory, IP routes setup, and user administration.
- **Bridge:** Information about the bridge port setup, VLAN configuration, Access Control setup, Forwarding setup, DHCP relay and PPPoE relay setup, and IGMP setup.
- **ADSL:** Information about the configuration of the ADSL line and profiles, loop test, etc.

- **Traffic:** Information about the configuration of ATM traffic descriptor.
- **SNMP:** Information about SNMP Community, SNMP Target, and SNMP Notify setup.
- **Maintenance:** Information about SysLog server setup, Configuration import/export, Firmware update, ATM loopback setup, Fault management and Performance monitoring.

The exact information displayed on each web page depends on the specific configuration that an operator is using. The following chapters provide a general description of the setup and configuration details.

Table 1 lists the various pages of the web configuration tool.

Table 1. WMI Page Map

System	*System Information*
	Board IP Setup
	Ethernet Port Service
	ADSL Port Service
	CLI Setup
	Cluster Setup
	System Inventory
	SNTP
	IP Routes
	User Administration
	Duplicator
802.1x Security	*System Protocol*
	RADIUS & Local Profile

Table 1. WMI Page Map

Bridge	Interface Setup	*GIGA Bridge*
		ADSL PVC
		ADSL Bridge
		ADSL Port Security
	VLAN Configuration	*Static VLAN*
		Protocol Based VLAN
		Translation VLAN
		Static Allowed IP
		MAC Spoofing
	Access Control	*Filtering*
		VLAN Priority Remark
		Rate Limit
		Priority Queue Mapping
	Forwarding	*TP Forwarding DB*
		Forwarding Static
	Relay	*DSL Line Identity*
	IGMP	*Protocol & Route Port*
		IGMP Profile
		IGMP Multicast
	IPOA	*BRAS MAC*
		Interface Setup
ADSL	Profile	*Service Profile*
		Service Profile (Channel)
		Spectrum Profile (Main)
		Spectrum Profile (ADSLx)
		TCA Profile
	Data & Inventory	*Inventory*
		Loop Test
		Carrier Data
		OP Data
	Line Config & Info	*Line Configuration*
		Line Information
Traffic	*ATM Traffic Descriptor*	
SNMP	*SNMP Community*	
	SNMP Target	
	SNMP Notify	

Table 1. WMI Page Map

Maintenance	*SYS Log Server*	
	Database	
	Firmware Update	
	ATM Loopbacks	
	Fault Management	*Alarm/Event*
		Alarm Profile
		Hardware Temp
	Performance Management	*System Utilization*
		Ethernet Statistics
		ATM Statistics
		RMON
		ADSL Day/Interval

Operating Examples

This section explains how to operate in the pages of the WMI.

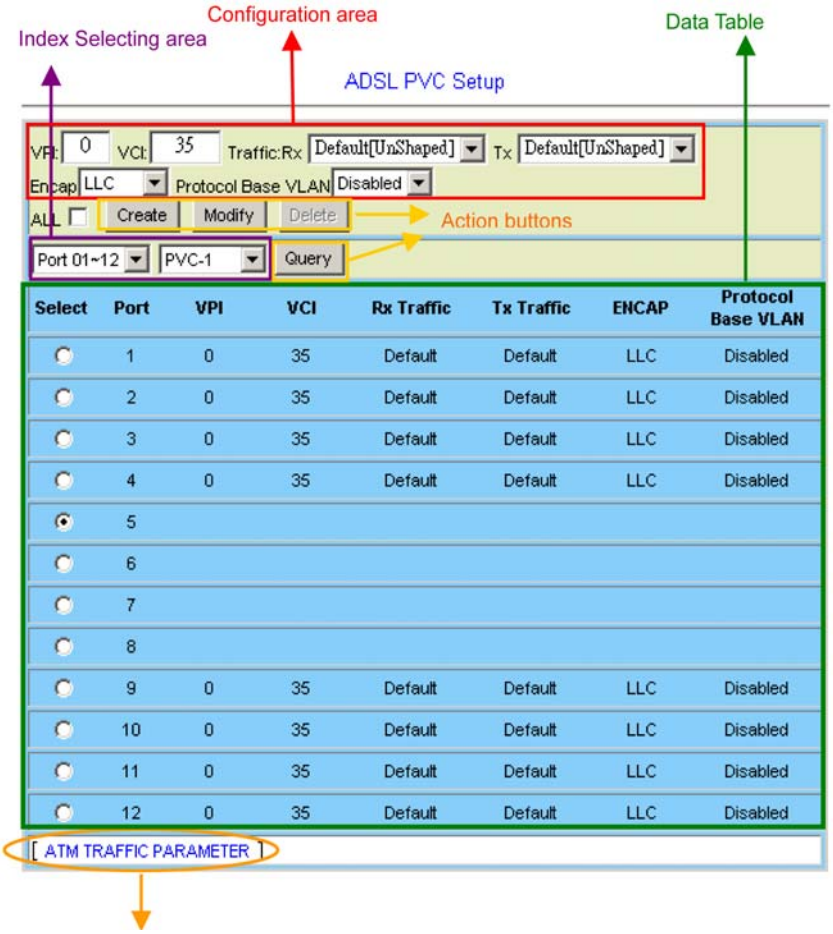


Figure 3. Navigating the ADSL PVC Setup page

Click on the hyperlinks below on each configuration page will lead you to the related page(s) directly without the need to search in the menu tree.

The Index Selecting area is usually for selecting the range of interface(s) to be configured. In this case, the filters (such as link type, circuit number, PVC number, or bridge port index) will enable the operator to easily locate the target interface(s) that he would like to provision. The Configuration area is for setting the parameter value of the entries in the table. This area shows the data of selected entry in Data Table to allow operator to modify the parameter values. The Data Table is for listing the setting of each interface (bridge port). Often, there is a radio button for each port. By clicking on the radio button, you can specify which entry to be created, modified, or deleted.

For the above example, first you must select the link type, circuit number range and PVC to identify the range of interfaces, and then the corresponding data of those interfaces will be listed in Data Table. Click on the radio button to select a circuit and modify the parameter values in the Configuration area. Then click on **Create** to create a new entry or **Modify** to change the setting of an existing entry. You can click on **Delete** to remove an entry. Click on **Query** to get current data whenever you want to make sure actual status of the system.

In some pages, there is the Global setup area (often with a **Set** button) on top of a page. After fill up the fields in this area, you have to click on **Set** to save the modification. Also the Configuration area is often located at the top inside the Data Table.

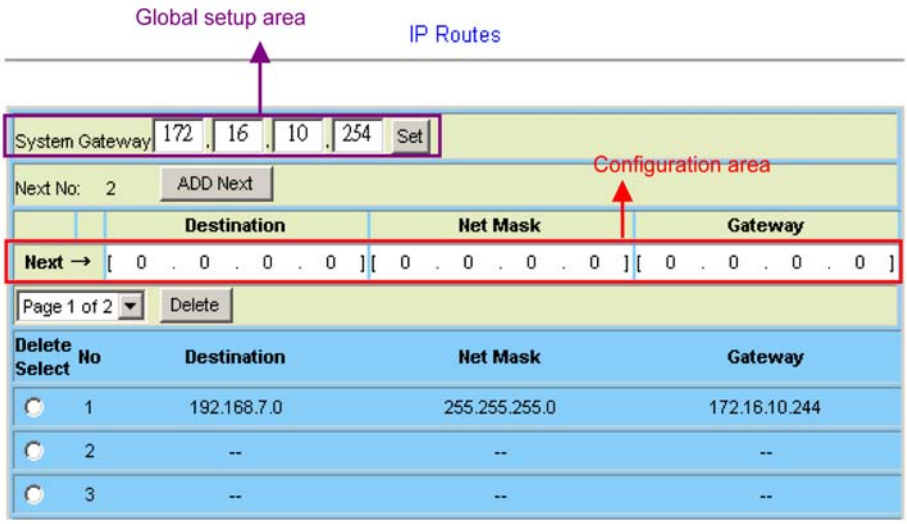


Figure 4. Navigating the IP Routes page

In some pages, you modify the data directly in the entry fields (remember to click on the check box or radio button to select the entry before you click on Modify button; thus the new values can really be saved into the system).

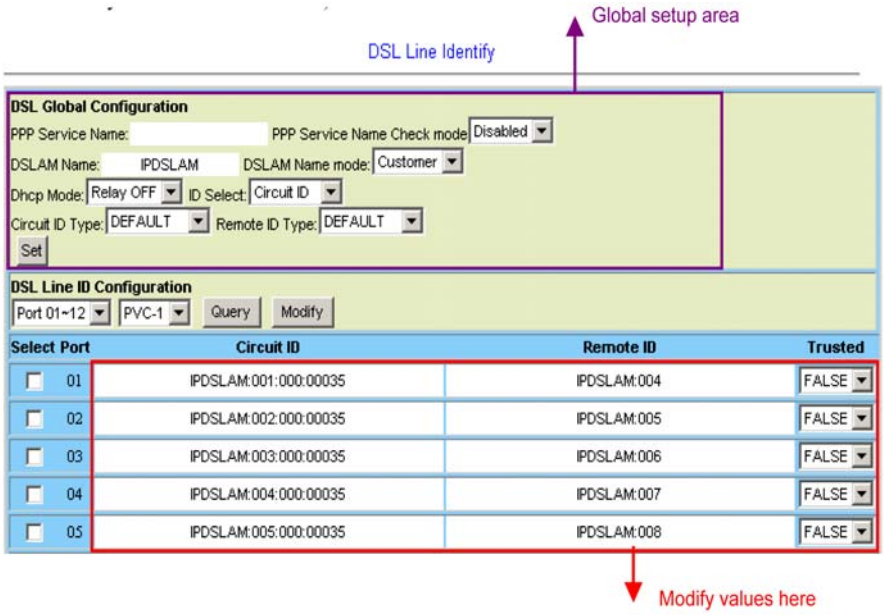


Figure 5. WMI Entry Fields

Chapter 2 System Configuration

Chapter contents

System Information 13
Board IP Setup 14
Ethernet Port Service 15
ADSL Port Service 16
CLI Setup 17
Cluster Setup 18
System Inventory 21
System Contact Info 21
SNTP 22
IP Routes 23
User Administration 24
Duplicator 26

System Information

The System Information page (the default page you'll see after you log in to the web configuration tool) contains information about the user access level, current system date and time, current boot configuration partition, system name, system HW/SW/FW version, web configuration software version, supported subscriber line type (AnnexA or AnnexB), system MAC address and management IP address, GBE interface status, and LED status (Power and Alarm).

From the **System** menu, click on **System Info**. The following page displays:

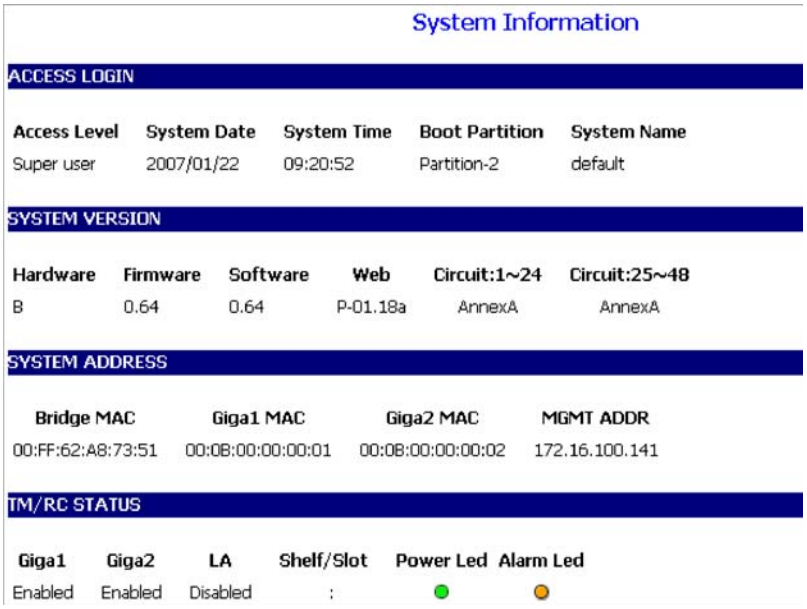


Figure 6. System Information page

Board IP Setup

This option allows you to configure the in band IP address setting, VID management setting, HTTP port setting, etc..

From the **System** menu, click on **Board Setup**. The following page displays:

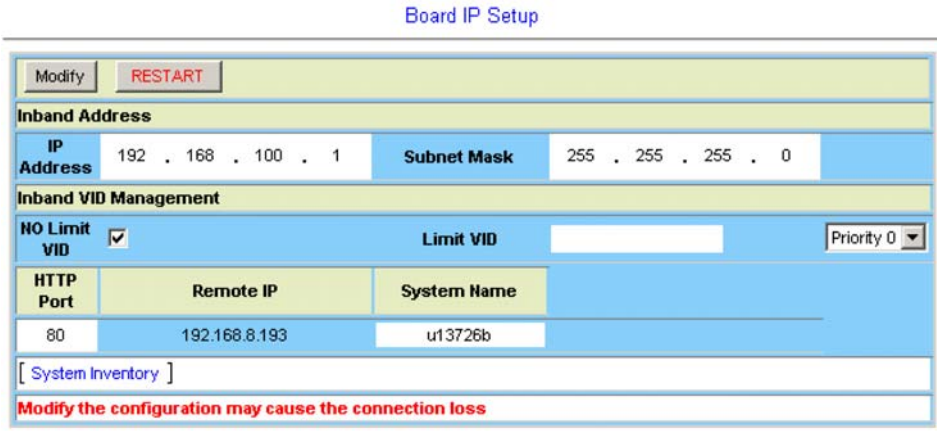


Figure 7. Board IP Setup page

Table 2. Board IP Setup Options

Label		Description
In Band Address	IP Address	Type in the IP address of the DSLAM for in-band management.
	Subnet Mask	Type in the in-band subnet mask of the DSLAM
Inband VID Management	No Limit VID	Select this checkbox if no specific in-band management VLAN is required, and the setting in "Limit VID" parameter will be ignored.
	Limit VID	The VLAN ID for individual in-band management VLAN.
	Priority	Select the VLAN priority level (0~7) of the in-band management traffic sent out from GBE port.
HTTP Port		Shows current HTTP port setting. You can modify http port setting in this field.
Remote IP		Shows the IP address of the management PC currently connected to this DLSAM.
System Name		Type in the name of the DLSAM (must not be all digital numbers, maximum 32 characters).
Modify		Click on this button to submit the modification.
RESTART		Click on this button to restart the system.

Ethernet Port Service

This option allows you to set the administration state and select the speed mode for the Gigabit Ethernet ports.

From the **System** menu, click on **Ethernet Port Service**.

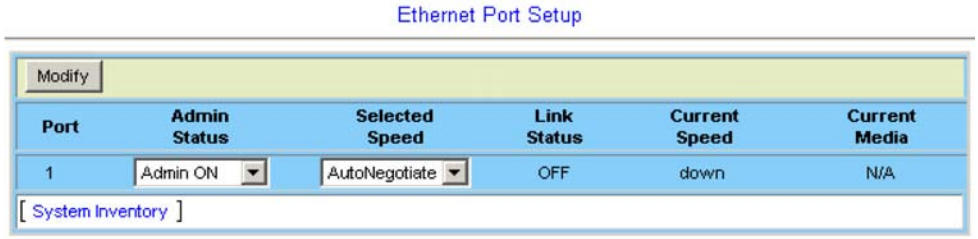


Figure 8. Ethernet Port Service page

Table 3. Ethernet Port Options

Label	Description
Port	This field shows port number of the Gigabit Ethernet interface.
Admin Status	Click on the drop-down list and select the administrative state (ON/OFF) to enable/disable the GBE port.
Selected Speed	Click on the drop-down list and select the speed mode for trunk GBE port. Supported options are: AutoNegotiate, 100Mbps Half (duplex), 100Mbps Full (duplex).
Link Status	Show operational status of the trunk ports (ON/OFF).
Current Speed	Show current speed mode of the trunk ports.
Current Media	Show current uplink transmission medium (via copper or SFP). This field will show N/A when Oper Status is OFF.
Modify	Click on this button to submit the modification.

ADSL Port Service

This option allows you to setup the service status of the line ports and to bind the selected service profiles and spectrum profiles. Also, you can query current setting and the operational status of the line ports.

From the **System** menu, click on **ADSL Port Service.** First, click on the drop-down list to select the port range to be displayed. Remember to click on the radio button to select a port to be modified (or select the All check-box to modify all ports of the page at a time).

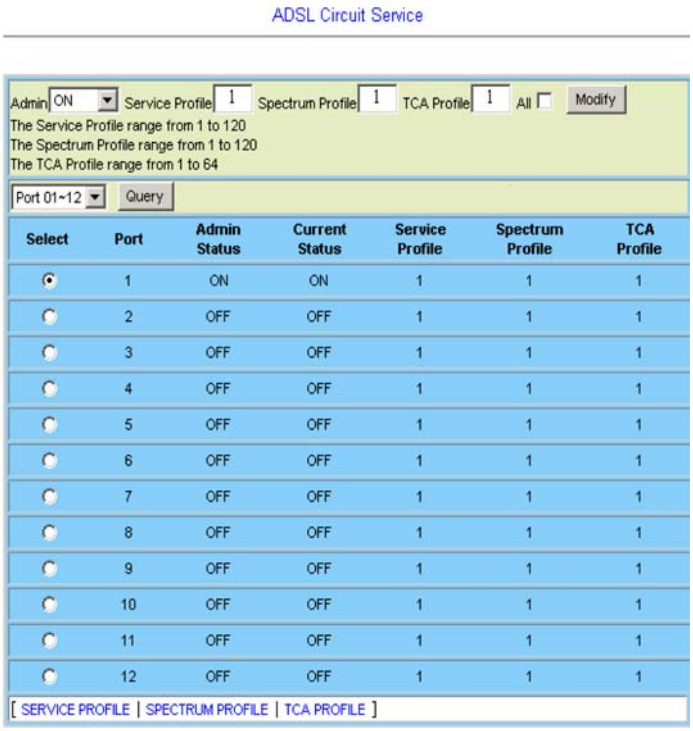


Figure 9. ADSL Port Service page

Table 4. ADSL Port Options

Label	Description
Admin	Click on the drop-down list and select the Administrative status: ON, OFF, or RESET.
Service Profile	Type in the index of the Service Profile (1~120).
Spectrum Profile	Type in the index of the Spectrum Profile (1~120).
TCA Profile	Type in the index of the TCA Profile (1~64).
All	Select the check box to select all circuits of current page.
Modify	Click on this button to submit the modification.
Query	Click on this button to get most recent status of the circuits.
Select	Click on the radio button to select the port to be modified.
Current Status	This field shows the operational status of the line ports. Possible values are ON (enabled), OFF (disabled), and Testing (in loop testing now).

CLI Setup

This option allows you to modify the timeout setting for a CLI session and the allowable number of sessions.

From the **System** menu, click on **CLI Setup**.

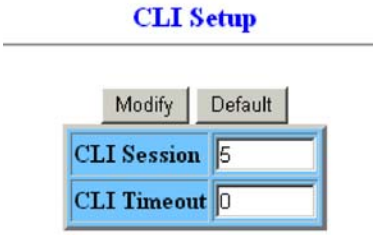


Figure 10. CLI Setup page

Table 5. CLI Setup Options

Label	Description
CLI Session	Allowable number of CLI sessions at the same time. Valid value: 1~10.
CLI Timeout	CLI session will be closed once the idle time exceeds this timeout value. Valid value: 180~3600 (sec), 0 for no timeout.
Modify	Click on this button to submit the modification.
Default	Click on this button to set default values (CLI session: 5, CLI timeout: 300 sec).

Cluster Setup

This option allows you to setup Cluster function, which can make a group of NEs (network elements) work together as a single NE from the management point of view. Before you group a Master and a Slave IPD-SLAM, some parameters need to be well configured:

1. **Cluster domain name**: The group name for a cluster must be the same on Master and Slave.
2. **Cluster IP address**: IP address to be used for remote management when Master and Slave are grouped together.
3. **NE cluster name**: A name to identify Master or Slave.
4. Set private IP address on in-band port for both Master and Slave IPDSLAM. The private IP is used for communication between Master and Slave. The management center actually uses Cluster IP address for remote management.
5. Master and Slave need to be configured with same management VLAN.
6. The default gateway should be configured to the router that is aware how to route management traffic to Management Center of the management network. The setting of Cluster default gateway should be the same between Master and Slave.

Currently a Model 3124 cluster can support up to four cluster members (NEs). The IPDSLAMs in a cluster must all be in-band connected through the GBE port. It uses star topology for conducting a Clustering Management group.

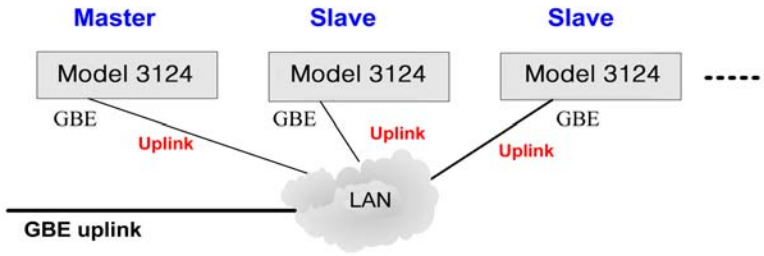


Figure 11. Cluster network topology - Star

From the **System** menu, click on **Cluster Setup**. The following page displays:

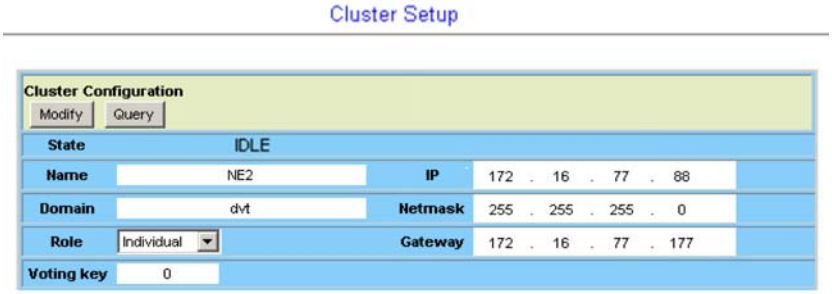


Figure 12. Cluster Setup page

By default, the DSLAM is not in a cluster. The state of the Cluster Configuration shows “IDLE” and the Role shows “Individual”.

To make the DSLAM join a cluster, select the Role as “Cluster” or “Slave only” according to your plan and then click on Modify. The state of the Cluster Configuration will show from **DISCOVERING** to **VOTING** to **MASTER** or **SLAVE** at last.

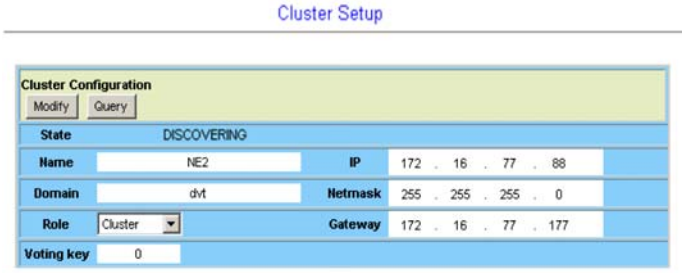


Figure 13. Cluster Configuration - Discovering State

The following figure shows the Cluster Setup page of a cluster containing two cluster members. You will see the following page if you’re connecting directly to the Master via its in-band IP address or connecting to the Cluster IP “172.16.77.88”. You can control all the IP DSLAMs in a cluster by connecting to the Cluster IP address, or by directly connecting to the Master IPDSLAM via its in-band IP address that is configured in the “Board IP Setup” on page 14.

Figure 14. Cluster Configuration - Master State

Table 6. Cluster Setup Options

Label	Description
Name	Type in the NE name in the cluster.
Domain	Type in the name of the cluster domain.
Role	Valid options are: Cluster (Master or Slave is decided by the system), Slave only (role of the DLSAM is always Slave), and Individual (not in a cluster).
Voting Key	Type in 0 or a positive integer as the priority to be Master. 0 means to let system decides Master and Slaves. If positive integer is typed in, the smaller the number is, the higher priority for the DSLAM to be a master in a cluster. But if there’s already a Master in a cluster, a new added DSLAM cannot try to be the Master by entering a smaller voting key number; the Master cannot be changed in this way.
IP	Type in the cluster IP address. Users can connect to and manage the cluster via the cluster IP address through in-band connection.

Table 6. Cluster Setup Options

Netmask	Type in the cluster's subnet mask.
Gateway	Type in the cluster's gateway IP address.
ID	This field shows Cluster ID, which indicates cluster ordering.
Modify	Click on this button to submit the modification.
Query	Click on this button to query current status.

To control a member in the cluster:

Select a Cluster member from the drop down list above the menu tree. Then you are controlling that NE now.

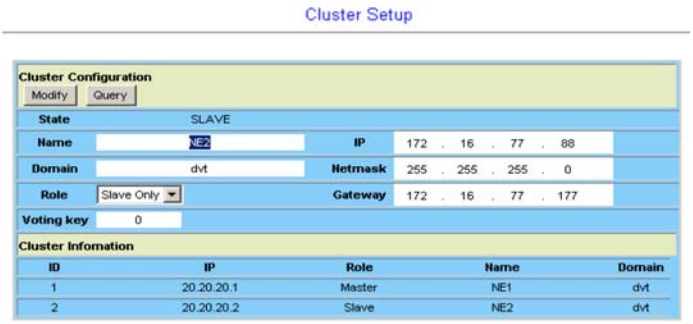


Figure 15. Cluster Configuration - Slave State

Every time you modify the setting (for example, changing the Role) of any cluster member, the cluster will be reconstructed (cluster state Discovering > Voting > Master or Slave). If you modify the Role to "Individual", Cluster State will show 'IDLE'. The DSLAM is not in a cluster now.

If you are directly connecting to a Slave in the cluster (connecting via its in-band IP address) you cannot switch to any other member in the cluster.

System Inventory

This option allows you to retrieve the system inventory including Description of the System, HW/FW/SW Version, Model Information, Part Number, Hardware Revision, and Serial Number.

From the **System** menu, click on **System Inventory**. Click on the **Query** button. The following page displays:

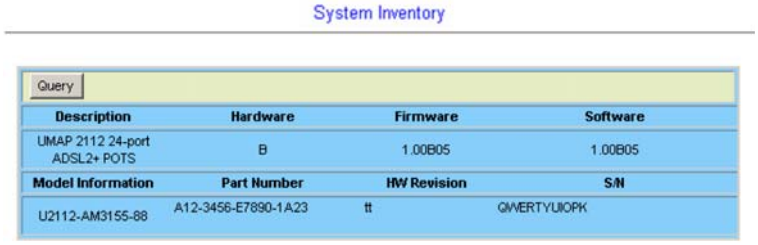


Figure 16. System Inventory page

System Contact Info

This option allows you to specify the system name, system contact, and system location.

From the **System** menu, click on **System Contact Info**. The following page displays:

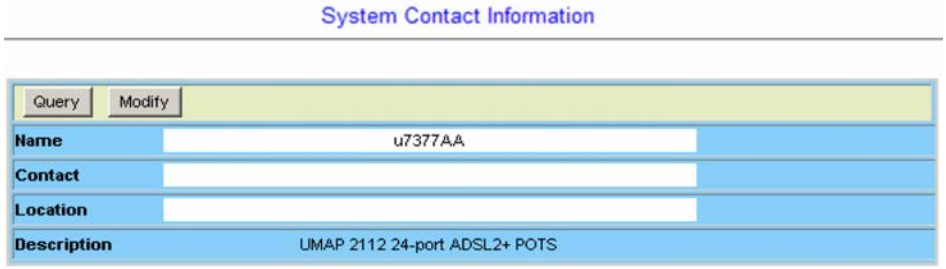


Figure 17. System Contact Info page

Type in the value you desire, and then click on **Modify** to apply the setting. Click on **Query** to verify if the value is changed.

SNTP

This option allows you to setup the Simple Network Time Protocol (SNTP).

From the **System** menu, click on **SNTP**. The following page displays:

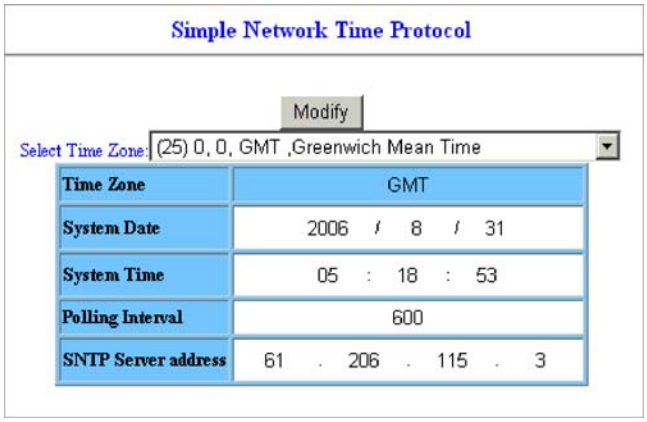


Figure 18. SNTP page

Table 7. SNTP Options

Label	Description
Time Zone	Sets the local time zone by selecting in the Time Zone drop-down list. Sixty-five of the world's time zones are presented (including those using standard time and summer/daylight savings time).
System Date	Sets system date (yyyy/mm/dd).
System Time	Sets system time (hh:mm:ss).
Polling Interval	Sets the polling interval (in seconds) that SNTP client will sync with a designated SNTP server.
SNTP Server address	Sets the dedicated unicast server IP address for which the SNTP client can synchronize its time.
Modify	Click on this button to submit the modification.

IP Routes

This option allows you to configure the IP route table for the in-band management traffic.

From the **System** menu, click on **IP Routes**.

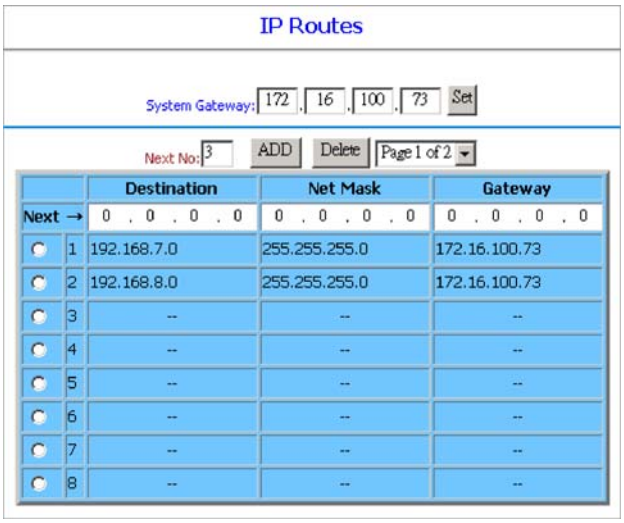


Figure 19. IP Routes page

Table 8. IP Route Setup Options

Label	Description
System Gateway	This field shows current system default gateway. You can modify the gateway address by typing in new value and then click on **Set**. If the DSLAM is a Slave in a cluster, this field shows the in-band IP address of the Master; if the DSLAM is a Master in afield shows the IP address of the Cluster gateway.
ADD Next	Click on this button to add a new IP route.
Destination	Type in the destination IP address for the new IP route.
Net Mask	Type in the subnet mask for the new IP route.
Gateway	Type in the IP address of the gateway for the new IP route.
Delete	Click on the radio button to select a route and then click on this button to delete this route from the table.

User Administration

This option allows you to administer accounts for users who access the DSLAM.

From the **System** menu, click on **User Administration**. Click on the drop-down menu for **Select** and choose a page to display.

Figure 20. User Administration page

Table 9. User Administration Options

Label	Description
Page	Click on the drop-down list and select the page to be displayed.
New	Click on this button to create a new user. The following page displays: Once you have typed in all the information for the new user, click on the **Create** button.
Delete or Modify	Click on the radio button on the leftmost column of the user table to select the user you want to delete / modify. Then click on **Delete** / **Modify** button. Note that the default **admin** user cannot be deleted.
User Name	Shows the name of the user (up to 32 characters).
Level	The available access levels include: **SUPERUSER**, **ENGINEER**, and **GUEST.**
Aging day	Set password expiration days (0 for no expiration days)
Start Date	Shows the day when the account was first created.
Last Login	Shows the day when a user last login.
Comment	Description about the user account (up to 31 characters).

If a new account is added: (for example, Test1 is added)

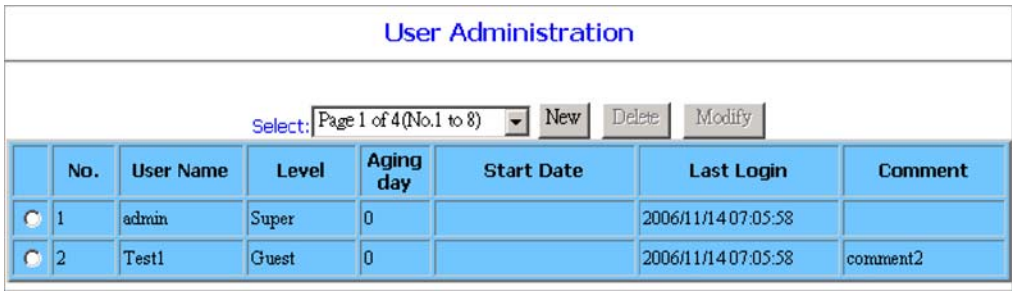


Figure 21. Add New User Account

When user Test1 intends to login for the first time, he will be asked to change his password (see the figure below) and then login with the new password.

Figure 22. Change User Password

Duplicator

This option allows you to duplicate all/partial the configurations of one selected line port (as a template) to other ports (as many as you want).

From the **System** menu, click on **Duplicator**.

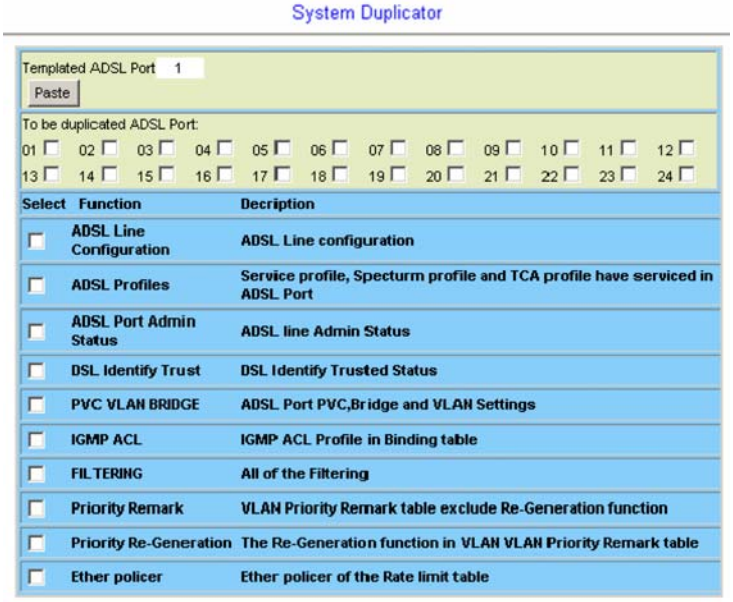


Figure 23. System Duplicator page

Select the content of configurations (ADSL line configuration, ADSL profiles, or…) you want to duplicate first. Then specify the port number as the template (the source port to be copied), and sAt last click on **Paste** to apply.

Chapter 3 Bridge Configuration

Chapter contents

Interface Setup 29
GIGA Bridge 29
ADSL PVC 30
ADSL Bridge 31
ADSL Port Security 33
802.1x Security Setup 34
System Protocol 34
Main Setting 34
Timer Setting 36
RADIUS & Local Profile 37
VLAN Configuration 38
Static VLAN 38
CONFIG VLAN 38
SHOW VLAN 38
Protocol Base VLAN 39
Translation VLAN 39
1:1 VLAN (including 1:1 User Mode and C_VLAN Stacking Replaced Mode) 40
N:1 VLAN (N:1 User Mode) 41
Static Allowed IP 41
MAC Spoofing 42
Access Control 43
Filtering 43
Protocol Filtering 43
Source MAC Filtering 44
IP Address Filtering 45
Layer 4 Destination Port Filtering 45
Destination IP Filtering 46
Destination MAC Filtering 47
Ether Type Filtering 48
VLAN Priority Remark 49
TOS 49
IP Source 50
IP Destination 51
MAC Source 52
MAC Destination 53
VLAN ID 54
VLAN Priority Regeneration 55
Differentiated Services 56
Protocol 57

Ether Type 58
Rate Limit 59
Rate Limit Broadcast 59
Rate Limit Flooding 60
Rate Limit Policer 60
Rate Limit Policer Binding Table 62
Three Color Marking Policer 62
Priority Queue Mapping 64
Forwarding 65
TP Forwarding DB 65
Forwarding Static 66
Relay 67
DSL Line Identify 67
IGMP 69
IGMP Protocol & Router Port 69
IGMP Profile 71
IGMP Multicast 73
List by Number 73
List by VID & Group IP 74
IGMP Source 74
IPOA 75
BRAS MAC 75
Interface Setup 76

Interface Setup

This option allows you to setup the trunk and line interfaces.

GIGA Bridge

This option allows you to setup the GBE (trunk) bridge interface. From the **Bridge** menu, click on **Interface Setup**, then **GIGA Bridge**. The following page displays:

Figure 24. GIGA Bridge page

Table 10. GIGA Bridge Options

Label	Description
Mode	Click on the drop-down list and specify the trunk port to be an Uplink or User (especially for system stacking).
VID	Type in the VLAN ID (1 ~ 4094).
Max MAC	Type in the maximum number of MAC addresses that can be learned by the bridge port (for GBE interface: 1 ~ 4096, for DSL interface: 1 ~ 128).
VLAN	VLAN setting for the egress traffic. Includes three drop-down lists: • PRI-0 ~ 7: Set the VLAN priority Level. • UnTagged/Tagged: Select to untag / tag the outgoing (upstream direction for trunk bridge ports) packets. If UnTagged is selected, a double-tagged packet will leave single-tagged (the outer most VLAN tag is removed) and a single-tagged packet will leave untagged. • no Stack/Stack: Disable/Enable N:1 VLAN stacking (our system adds the default VLAN tag to all the incoming frames through this port). *Note:* When an untagged frame enters the Model 3124, it is assigned the default PVID of the ingress (incoming) bridge port and become a single-tagged frame no matter VLAN stacking is enabled or not.
Ingress	Set Ingress ON: check if the VID of the incoming frame is in the member set. If not in the member set, block the frame. Set Ingress OFF: Ingress filter disabled.
AccFrm	Click on the drop-down list and select to accept ALL Frame, only VLAN tagged frame, or only Untagged frame.
Isol	ON/OFF to enable/disable isolation. When port isolation is enabled, packets received from a trunk port (when both the trunk interfaces are configured as up-link) cannot be forwarded to the other trunk port even for broadcasting.

Table 10. GIGA Bridge Options

Modify	To modify the configuration of a GIGA port: 1. Click on the radio button to select trunk port 1 2. Change the parameter values 3. Click on Modify button to apply new values
Query	Click on this button to query current status.

ADSL PVC

This option allows you to setup the ADSL PVC. From the **Bridge** menu, click on **Interface Setup** and then **ADSL PVC**. Click on the drop-down lists to select port range and PVC first. Then the data of these PVCs (bridge ports) you selected will be displayed. Click on the radio button to select the PVC you want to create, modify, or delete.

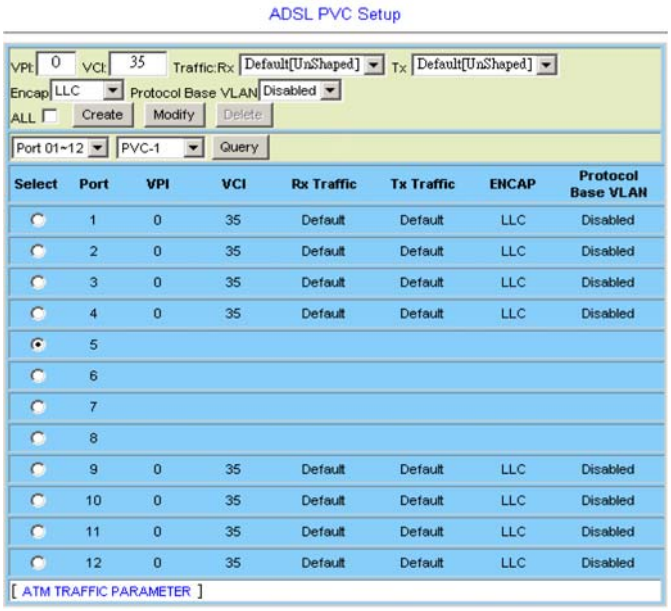


Figure 25. ADSL PVC page

Table 11. ADSL PVC Options

Label	Description
VPI	Type in the VPI value: 0 ~ 255. Default value is 0.
VCI	Type in the VCI value: 21, 32 ~ 65535. Default value is 35.
Traffic	Click on the drop-down list and select a traffic type for transmit and receive direction respectively. Available options are created in the ATM Traffic Descriptor page.
Encap	Select AAL5 Encapsulation Type: VCMUX, LLC, or AUTO (for PVC#1 ~ PVC#4 only).[a]
Protocol Based VLAN	Select in the drop-down list to enable or disable protocol based VLAN function. When protocol based VLAN is enabled, the bridge port will work according to the protocol based VLAN table.

Table 11. ADSL PVC Options

All	Select the check box to copy specified circuit to all remainder circuits in current page.
Create	Click on the radio button to select a PVC (bridge port) that has not been created. Set the parameter values and then click on Create to create a PVC.
Modify	Click on the radio button to select the PVC (bridge port) you want to modify. Change the parameter values and then click on Modify.
Delete	Click on the radio button to select the PVC (bridge port) you want to delete. Then click on Delete to remove the PVC.
Query	Click on this button to get the most recent data.

a.The Model 3124 supports auto-detection of the ATM AAL5 encapsulation method, LLC or C-Mux. Meanwhile, the Model 3124 is also able to automatically sense the following protocol encapsulations: PPPoE over ATM (per RFC 2684), IPoE over ATM bridge mode, and PPP over ATM. IPoA works on individual PVC. However, there are limitations on auto-detection of encapsulations:

1. LLC/VC-Mux automatically detection is only applicable to PVC#1 ~ PVC#4 of each ADSL port. PVC#5 ~ PVC#8 must be assigned the ATM AAL5 encapsulation method manually.
2. PPPoA works only for PVC#1 ~ PVC#4 and the LLC/VC-Mux automatically detection must be enabled. Refer to section IPoA configuration.

ADSL Bridge

This option allows you to setup the ADSL bridge interface. From the **Bridge** menu, click on **Interface Setup**, then **ADSL Bridge**. The following page displays. Click on the drop-down lists to select port range and PVC first. Then the data of these PVCs (bridge ports) you selected will be displayed. Click on the radio button to select the bridge port you want to modify.

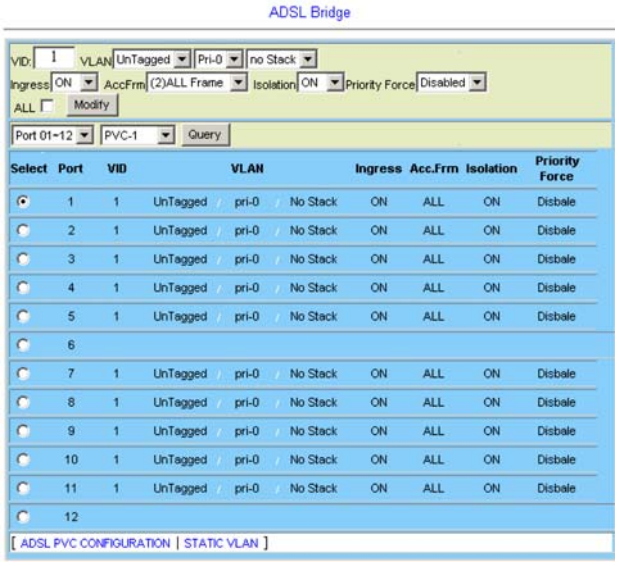


Figure 26. ADSL Bridge page

Table 12. ADSL Bridge Options

Label	Description
VID	Type in the VLAN ID (1 ~ 4094).
VLAN	VLAN setting for the egress traffic. Includes three drop-down lists: • UnTagged/Tagged: Select to untag / tag the outgoing (downstream direction for line bridge ports) packets. If UnTagged is selected, a double-tagged packet will leave single-tagged (the outer most VLAN tag is removed) and a single-tagged packet will leave untagged. • PRI-0 ~ 7: Set the VLAN priority Level. • no Stack/Stack/TLS: disable N:1 VLAN stacking / enable N:1 VLAN stacking (our system adds the default VLAN tag to all the incoming frames through this port) / enable TLS (transparent LAN service) so that this bridge port becomes VLAN transparent (refer to DSL Forum, TR-101). A pre-configured S-Tag is used to encapsulate TLS traffic going through this port. That is, an S-Tag (PVID here) will be added to all the upstream frames received on this port, and the C-Tags will be the original tags of these frames (no C-Tag for untagged incoming frames). On the other hand, the S-tag will be removed from all the downstream (outgoing) frames. *Note:* When an untagged frame enters the Model 3124, it is assigned the default PVID of the ingress (incoming) bridge port and become a single-tagged frame no matter VLAN stacking is enabled or not.
Ingress	Set Ingress ON: check if the VID of the incoming frame is in the member set. If not in the member set, block the frame. Set Ingress OFF: Ingress filter disabled.
AccFrm	Click on the drop-down list and select to accept ALL Frame, only VLAN tagged frame, or only Untagged frame.
Isolation	ON/OFF to enable/disable isolation. When port isolation is enabled, packets received from a line bridge port (including trunk interface configured as user link) cannot be forwarded to the other trunk port even for broadcasting.
Priority Force	Click on the drop-down list and select the priority-forcing mode. • Disabled: Reserve the original priority of all packets. • Ingress: Force applying the default VLAN priority value to all the packets received on this bridge port (so this rule will work on all the member-set of this bridge port). • Egress: Force the priority value of all packets sent out from this bridge port's default VLAN to be the default VLAN priority (so this rule only works on default VLAN of this bridge port). • Both: Combine the rules of Ingress and Egress.
All	Select the check box to copy specified circuit to all remainder circuits in current page.

Table 12. ADSL Bridge Options

Modify	Click on the radio button to select the bridge port you want to modify. Change the parameter values and then click on Modify.
Query	Click on this button to get the most recent data.

ADSL Port Security

This option allows you to setup the ADSL port security. From the **Bridge** menu, click on **Interface Setup**, then **ADSL Port Security**. The following page displays. Click on the drop-down lists to select port range and PVC first. Then the data of these PVCs (bridge ports) you selected will be displayed. Click on the radio button to select the bridge port you want to modify.

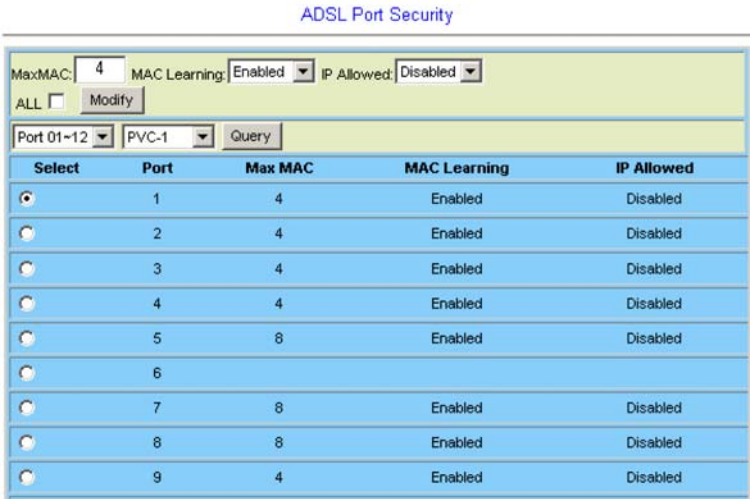


Figure 27. ADSL Port Security page

Table 13. ADSL Bridge Options

Label	Description
Max MAC	Type in the maximum number of MAC addresses that can be learned by the ADSL bridge port (1 ~ 128).
MAC Learning	Select to enable/disable MAC learning ability. Sometimes you can disable MAC learning on specified bridge port. This function is for 1:1 VLAN translation scenario.
IP Allowed	Select to enable/disable IP Allowed function. When you enable IP Allowed function on a bridge port, this bridge port will work according to the Static Allowed IP table (refer to section 4.3.4). So you need to define the source IP addresses that bind to this bridge port. Then the IP packets that contain these source IP addresses can pass through this bridge port;otherwise the packets will be blocked.
All	Select the check box to copy specified circuit to all remainder circuits in current page.
Modify	Click on the radio button to select the bridge port you want to modify. Change the parameter values and then click on Modify.
Query	Click on this button to get the most recent data.

802.1x Security Setup

System Protocol

This option allows you to enable/disable 802.1x authentication function of the system, and setup the 802.1x authentication mechanism for each line bridge port. Before you setup 802.1x for a line bridge port, you must create the ADSL PVC (bridge port) first.

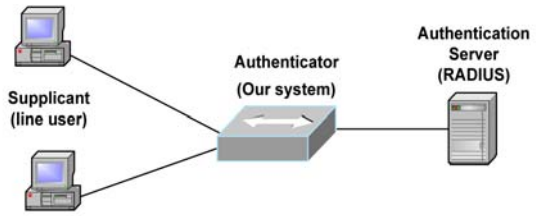


Figure 28. 802.1x Diagram

From the **802.1x Security** menu, click on **System Protocol.**

Main Setting

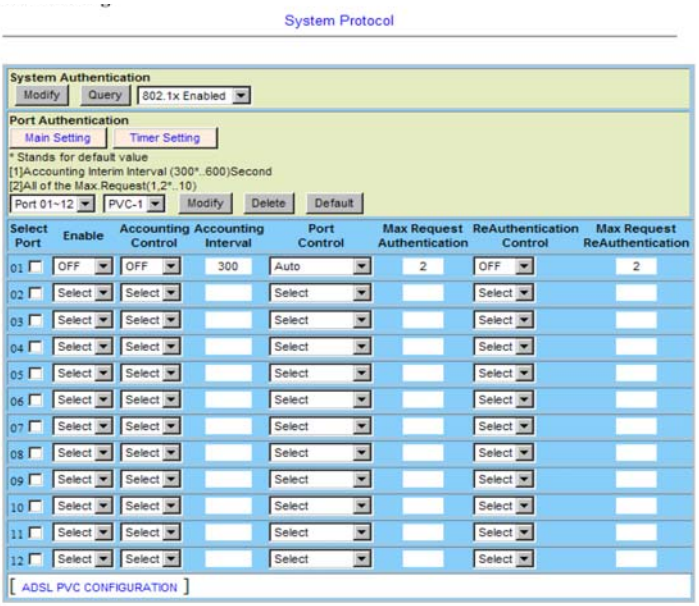


Figure 29. 802.1x System Protcol - Main Setting page

Table 14. 8021.x System Protocol - Main Setting Options

Label	Description
System Authentication section	
Click on the drop-down list to enable or disable the 802.1x authentication function of the system. If you select “Disabled”, any setting in the Port Authentication section will not take effect.	

Table 14. 8021.x System Protocol - Main Setting Options

Port Authentication section - Main Setting	
Port 01~12 PVC-1	Select the line bridge port range to be listed.
Select Port	Remember to select the checkbox when you want to modify/delete the setting of a bridge port or set a bridge port to its default value.
Enable	OFF/ON: disable/enable 802.1x authentication function for the bridge port. When 802.1x is disabled, the system allows bidirectional normal traffic in this port in spite of its authentication state. Default is OFF.
Accounting Control	OFF: notify RADIUS server to stop accounting for this port. ON: notify RADIUS server to start accounting for this port. Default is OFF.
Accounting Interval	Type in the interval (300 ~ 600 sec) between accounting information updates. Default is 300 sec.
Port Control	Force-unAuth: cause the port to stay in the unauthorized state, ignoring all attempts by the client to authenticate. Force-Auth: disable 802.1X authentication and cause the port to transition to the authorized state without any authentication exchange required. Auto: enable 802.1x authentication and cause the port to begin the authentication process from unauthorized state.
Max Request Authentication	Type in the number of times our system will send authentication requests to Supplicant if no response from the Supplicant is received. Default value is 2.
ReAuthentication Control	OFF: disable re-authentication after a period of time ON: enable re-authentication after a period of time Default is OFF.
Max Request ReAuthentication	Type in the number of times our system will send authentication

Timer Setting

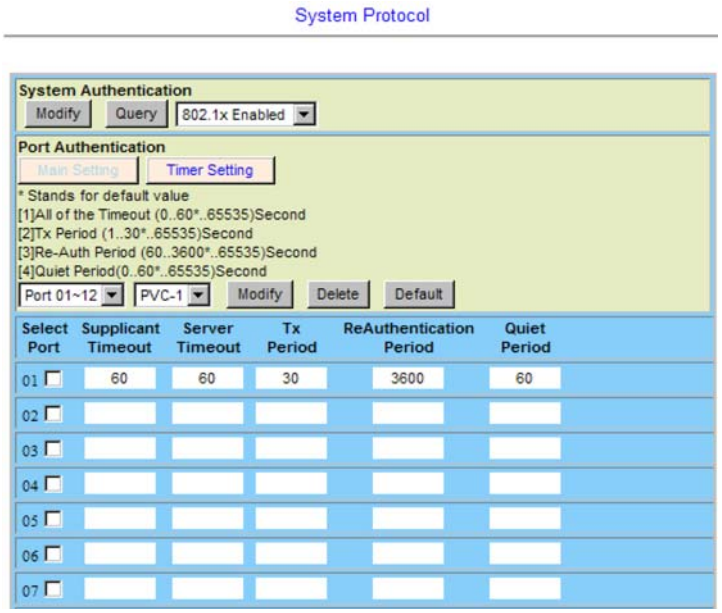


Figure 30. 802.1x System Protcol - Timer Setting page

Table 15. 8021.x System Protocol - Timer Setting Options

Label	Description
Port Authentication section - Timer Setting	
Port 01~12 **PVC-1**	Select the line bridge port range to be listed.
Select Port	Remember to select the checkbox when you want to modify/delete the setting of a bridge port or set a bridge port to its default value.
Suuplicant Timeout	Type in the number of seconds our system will wait for a response before resending the request to the supplicant. Default is 60 (sec).
Server Timeout	Type in the number of seconds our system will wait for a reply before resending the response to the authentication server. Default is 60 (sec).
Tx Period	Type in the number of seconds our system will wait for a response to an EAP-request/identity frame from the supplicant before resending the request. Default is 30 (sec).
ReAuthentication Period	Type in the number of seconds between re-authentication requests. Default is 3600 (sec).
Quiet Period	Type in the number of seconds that our system remains in the quiet state following a failed authentication exchange with the supplicant. Default is 60 (sec).

RADIUS & Local Profile

The Model 3124 system supports RADIUS client function for authenticating line ports with local authentication database or remote RADIUS server. From the **802.1x Security** menu, click on **RADIUS & Local Profile**. The following page displays:

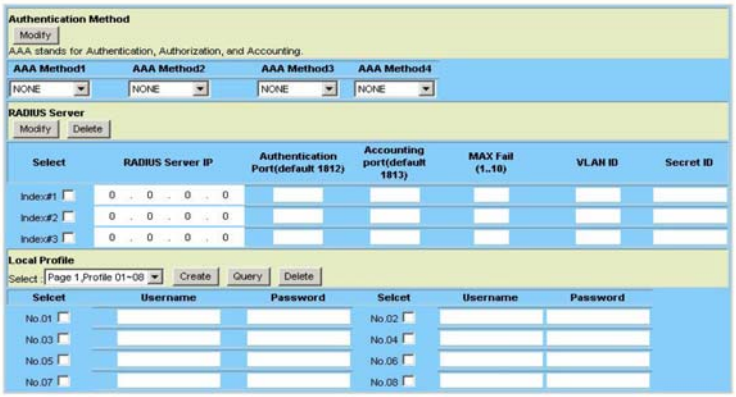


Figure 31. RADIUS & Local Setup page

Table 16. RADIUS & Local Setup Options

Label	Description
Authentication Method section	
In this section, operators set up four AAA methods for the system to use, and the priority order is Method1 > Method2 > Method3 > Method4. If a user cannot be authenticated when the system uses Method1, the system will then try to use Method2, and so on. Click on the AAA method drop-down list and select a RADIUS server index or the local profile, which has been already configured in the RADIUS Server section or Local Profile section. Lastly, click on the Modify button.	
RADIUS Server section	
Select (Index#n)	Remember to select the checkbox when you want to modify or delete a RADIUS server entry.
RADIUS Server IP	Type in the IP address of the remote RADIUS server.
Authentication Port	Type in the port number for RADIUS Authentication in the Layer-4 header. Default is 1812.
Accounting Port	Type in the port number for RADIUS Accounting in the Layer-4 header. Default is 1813.
Max Fail	Type in the maximum allowable times of continuously failed authentication attempts.
VLAN ID	Type in the VID of the VLAN which the RADIUS server belongs to.
Secret ID	Type in the authentication key in text format.
Local Profile section	
Select	Click on the drop-down list and select the profile range to be listed. There are total 8 pages and 8 profiles per page (up to 64 local profiles can be set in our system).
Username	Type in the username for authentication.
Password	Type in the password for authentication.

VLAN Configuration

Static VLAN

This option allows you to configure the static VLAN. From the **Bridge** menu, click on **VLAN Configuration** and then **Static VLAN.** The **Static VLAN** page displays. Click on the radio button to select **CONFIG VLAN** or **SHOW VLAN**.

CONFIG VLAN

Click on the drop-down list to select **ADSL or GIGA** port. Then, select a port and PVC if ADSL is selected. Once you have selected the bridge interface, its current static VLAN setting displays. To add a new VLAN member, type in VID for the **New VID** field and then select Tagged/UnTagged for **VLAN Tag**, ON/OFF for **Isolation**, and VLAN **Priority** Level (specify a number or reserve the original value) for Priority. Lastly, click on **Create==>**. To modify or delete a VLAN, select the checkboxes of the entries you want to modify or delete and then click on **Modify** or **Delete**.

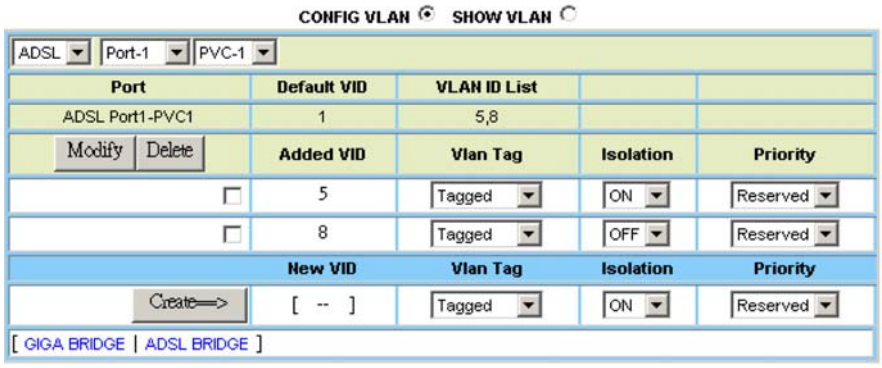


Figure 32. Static VLAN - CONFIG VLAN

SHOW VLAN

In **SHOW VLAN**, type in the VID and then click on **Query**. All the bridge ports belonging to the VLAN and the configuration data of these ports will display in the table.

Figure 33. Static VLAN - SHOW VLAN

Protocol Base VLAN

This option allows you to configure the protocol-based VLAN table. From the **Bridge** menu, click on **VLAN Configuration** and then **Protocol Base VLAN.** The following page displays. Select the checkboxes of the entries you want to create or delete. To create a new entry, type in the **VLAN ID** and select the **EtherType** (protocol). If you select Other for EtherType, type the EtherType value in the field on the far right.

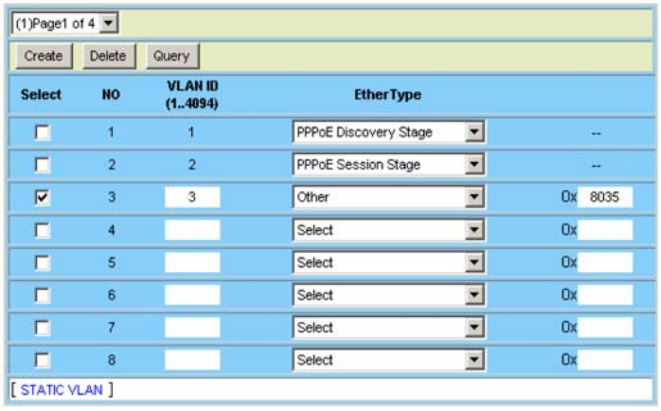


Figure 34. Protocol Base VLAN

Translation VLAN

This option allows you to configure the translation VLAN table, which defines some special VLAN working rules such as VLAN stack, VLAN cross-connect, etc. Before you configure the Translation VLAN table for a line bridge port, you shall configure the Static VLAN table for this line bridge port and the GIGA bridge port in advance. Also, you shall disable VLAN stacking feature of this line bridge port in the ADSL bridge interface setup page (see "ADSL Bridge" on page 31), otherwise the VLAN translation rule here will not take effect. From the **Bridge** menu, click on **VLAN Configuration** and then **Protocol Base VLAN.** The following page displays. Click on the radio button to select translation Mode first.

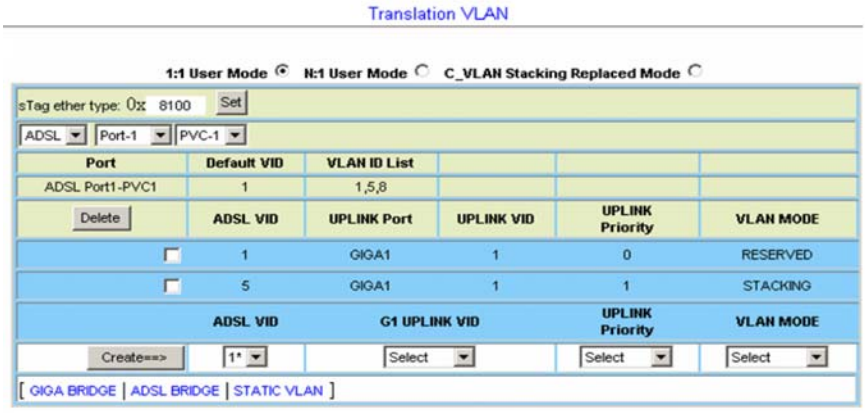


Figure 35. Translation VLAN

The Model 3124 provides five translation modes: four for "1:1 VLAN (including 1:1 User Mode and C_VLAN Stacking Replaced Mode)" on page 40 and one for "N:1 VLAN (N:1 User Mode)" on page 41.

1:1 VLAN (including 1:1 User Mode and C_VLAN Stacking Replaced Mode)

If the ADSL user bridge port only has 1:1 VLAN, then MAC learning function of this bridge port can be disabled.

1. **Reserved**: In this mode, the system does not make any change on C-Tag. That is the uplink port's S-Tag is actually the C-Tag. The system provides a tunnel for the user port and uplink port. And one VLAN ID can only make one tunnel.
2. **Replaced**: In this mode, the system will change the user port's C-Tag to the Uplink port's S-Tag. And the mapping is one to one, that is, one user port's C-Tag (one VID) can only translate to one uplink port's S-Tag (one VID), and vice versa. For example, for ADSL Port1-PVC1, if ADSL VID 5 translates to GIGA1 VID 1, then you cannot make ADSL VID 5 translate to another GIGA VID. You also cannot make another ADSL VID translate to GIGA VID1.

   Upstream: C-Tag -> (User port)-----(Uplink port) -> S-Tag

   Downstream: S-Tag -> (Uplink port)-----(User port) -> C-Tag
3. **Stacking:** In this mode, the system will add S-TAG before user port's C-TAG. Note that the mapping from C-Tag to S-Tag+C-Tag is still one to one. So a user port's C-Tag can't be used for another translation rule, as well as an uplink port's S-Tag+C-Tag.

   Upstream: C-Tag -> (User port)-------(Uplink port) -> S-Tag+C-Tag

   Downstream: S-Tag+C-Tag -> (Uplink port)--------(User port) -> C-Tag
4. **Stacking and Replaced:** In this mode, the system will replace the user port's C-Tag to C'-Tag and add S-Tag before C'-Tag. Note that the mapping from C-Tag to S-Tag+C'-Tag is still one to one. So a user port's C-Tag can't be used for another translation rule, as well as an uplink port's S-Tag+C'-Tag.

   Upstream: C-Tag -> (User port)-------(Uplink port) -> S-Tag+C'-Tag

   Downstream: S-Tag+C'-Tag -> (Uplink port)--------(User port) -> C-Tag

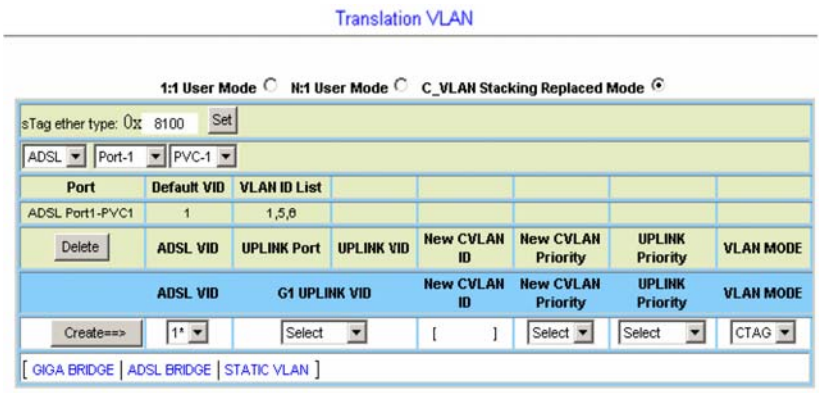


Figure 36. Translation VLAN - C-Tag

N:1 VLAN (N:1 User Mode)

N:1 can also be called shared VLAN, so in this mode MAC learning function of the bridge ports must not be disabled.

1. **Replaced N:1:** In this mode, the system will change the user port's C-Tag to the Uplink port's S-Tag. And the mapping is N to 1, so a user port's C-Tag can't be used for another VLAN translation rule. But an uplink port's S-Tag can be used for another N:1 VLAN translation rule. So in this mode several bridge ports can have the same VLAN cross-connect rule.

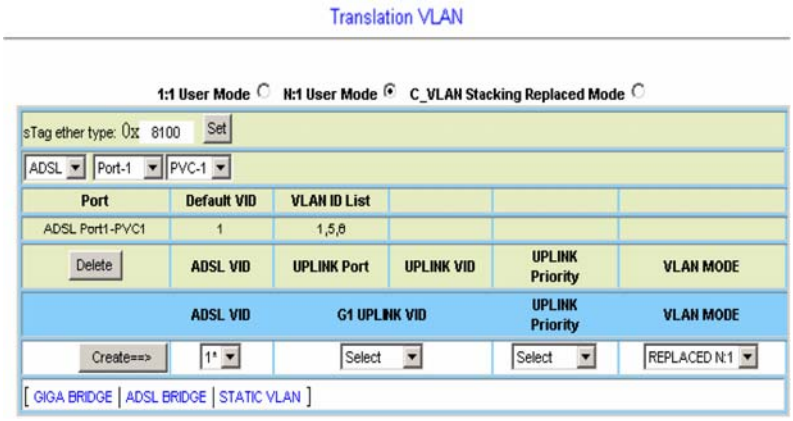


Figure 37. Translation VLAN - Replaced N:1

Static Allowed IP

This option allows you to configure the Static Allowed IP table. From the **Bridge** menu, click on **VLAN Configuration** and then **Static Allowed IP**. The following page displays. To make bridge port work according to this Static Allowed IP table, the IP allowed function must be enabled (see "ADSL Port Security" on page 33).

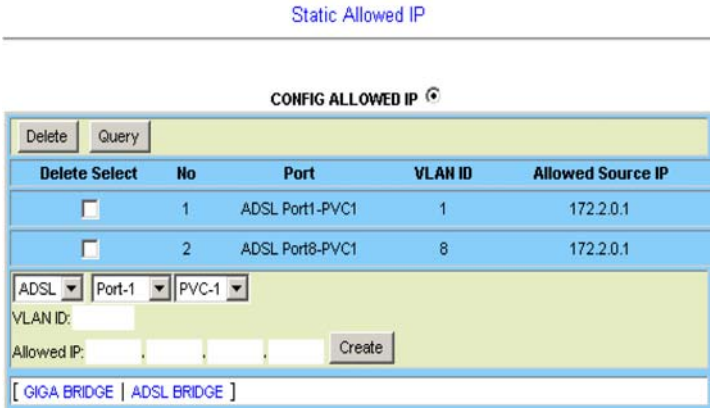


Figure 38. Static Allowed IP table

Click on the drop-down lists to select ADSL port and PVC number, then type in VID and allowed source IP that can pass through the VLAN.

MAC Spoofing

This option allows you to enable/disable anti-MAC Spoofing function and MAC-Spoofing detection log function. From the **Bridge** menu, click on **VLAN Configuration** and then **MAC Spoofing**. The following page displays.

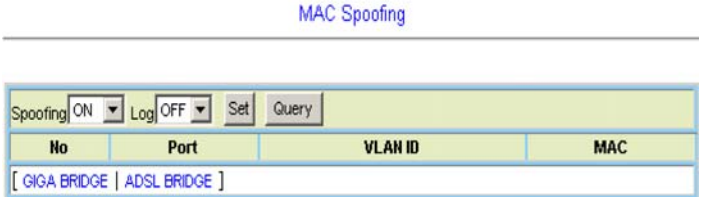


Figure 39. MAC Spoofing page

Table 17. MAC Spoofing Options

Label	Description
Spoofing	Click on the drop-down list to select: OFF: The system is able to provide service to users with duplicate MAC addresses. ON: The system is able to deny service to users with duplicate MAC addresses.
Set	Click on the drop-down list to select: OFF: No log of MAC spoofing data when detected. ON: The system provides log when duplicated MAC addresses detected.
Log	Click on this button to apply the setting.
Query	Click on this button to get the MAC spoofing information (the Log function must be enabled).

Access Control

Filtering

This option allows you to setup the filter rule for the packets. From the **Bridge** menu, click on **Access Control** and then **Filtering**. Click on **Filtering Type** drop-down list and select a filtering type first.

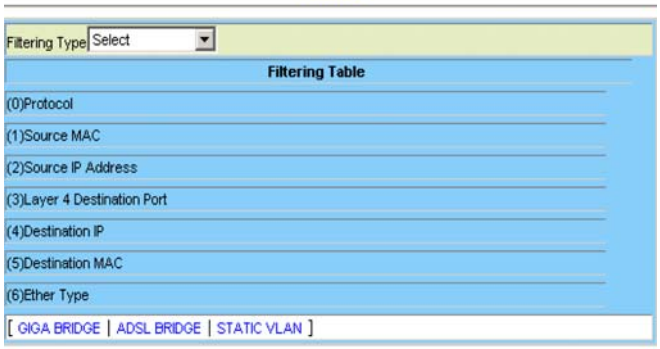


Figure 40. Filtering Table

Protocol Filtering

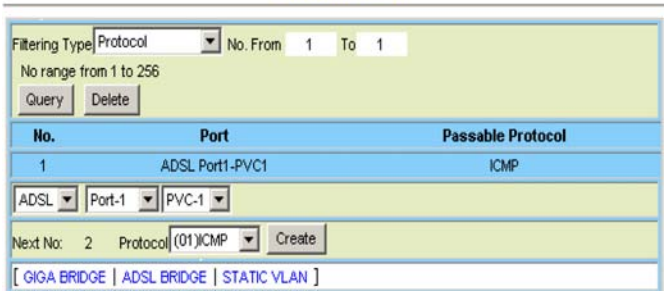


Figure 41. Protocol Filtering page

Table 18. Protocol Filtering Settings

Label	Description
Filtering Type	Select the filtering type from the drop-down list.
No. From...To...	Type in the range of serial number in the filter rule table. Valid number value: 1 ~ 256.
Query	Once you have specified the serial number, click on this button to display the filter rules.
Delete	Once you have specified the serial number, click on this button to delete the filter rules in the table.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Protocol	Click on this drop-down list and select a protocol to deny: ICMP, IGMP, IP in IP, TCP, GRP, IGP, UDP, GRE, EIGRP, or OSPF.
Create	Click on this button to create new filter rules in the table.

Source MAC Filtering

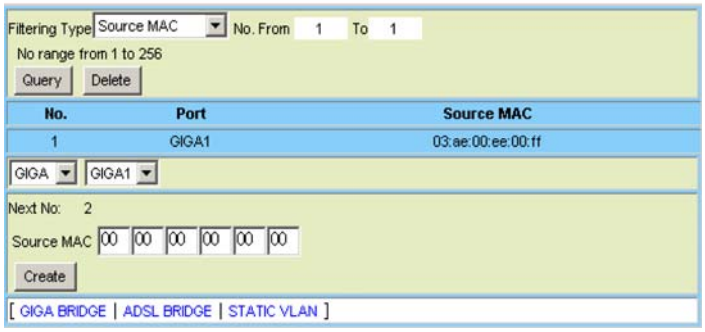


Figure 42. Source MAC Filtering page

Table 19. Source MAC Filtering Settings

Label	Description
Filtering Type	Select the filtering type from the drop-down list.
No. From...To...	Type in the range of serial number in the filter rule table. Valid number value: 1 ~ 256.
Query	Once you have specified the serial number, click on this button to display the filter rules.
Delete	Once you have specified the serial number, click on this button to delete the filter rules in the table.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Source MAC Address	Type in the MAC Address of the source.
Create	Click on this button to create new filter rules in the table.

IP Address Filtering

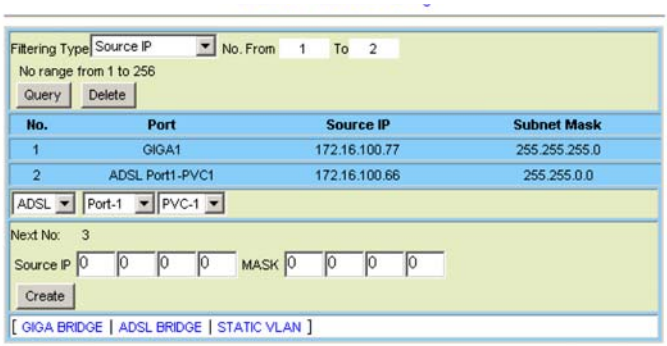


Figure 43. Source IP Address Filtering page

Table 20. Source IP Address Filtering Settings

Label	Description
Filtering Type	Select the filtering type from the drop-down list.
No. From...To...	Type in the range of serial number in the filter rule table. Valid number value: 1 ~ 256.
Query	Once you have specified the serial number, click on this button to display the filter rules.
Delete	Once you have specified the serial number, click on this button to delete the filter rules in the table.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Source IP Address	Type in the IP Address of the source.
MASK	Type in the subnet mask.
Create	Click on this button to create new filter rules in the table.

Layer 4 Destination Port Filtering

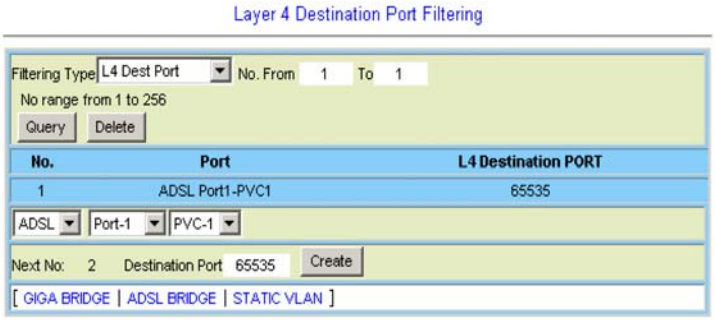


Figure 44. Layer 4 Destination Port Filtering page

Table 21. Layer 4 Destination Port Filtering Settings

Label	Description
Filtering Type	Select the filtering type from the drop-down list.
No. From...To...	Type in the range of serial number in the filter rule table. Valid number value: 1 ~ 256.
Query	Once you have specified the serial number, click on this button to display the filter rules.
Delete	Once you have specified the serial number, click on this button to delete the filter rules in the table.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Destination Port	Type in the Destination Port number (1 ~ 65535).
Create	Click on this button to create new filter rules in the table.

Destination IP Filtering

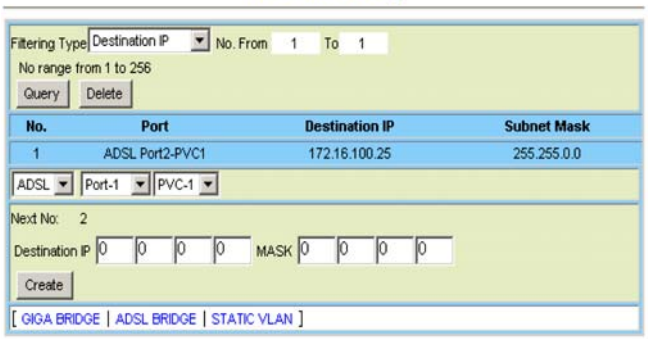


Figure 45. Destination IP Filtering page

Table 22. Destination IP Filtering Settings

Label	Description
Filtering Type	Select the filtering type from the drop-down list.
No. From...To...	Type in the range of serial number in the filter rule table. Valid number value: 1 ~ 256.
Query	Once you have specified the serial number, click on this button to display the filter rules.
Delete	Once you have specified the serial number, click on this button to delete the filter rules in the table.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Destination IP	Type in the Destination IP address.
MASK	Type in the subnet mask.
Create	Click on this button to create new filter rules in the table.

Destination MAC Filtering

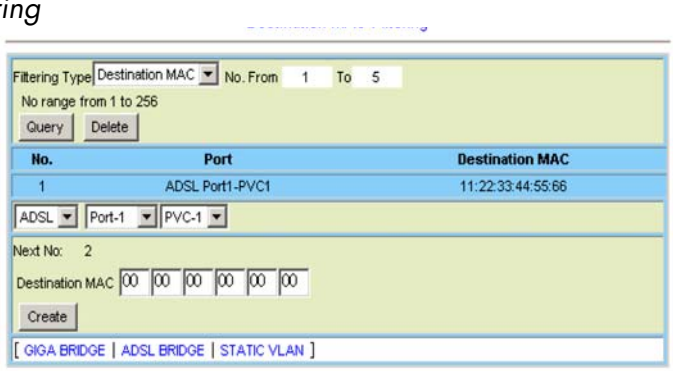


Figure 46. Destination MAC Filtering page

Table 23. Destination MAC Filtering Settings

Label	Description
Filtering Type	Select the filtering type from the drop-down list.
No. From...To...	Type in the range of serial number in the filter rule table. Valid number value: 1 ~ 256.
Query	Once you have specified the serial number, click on this button to display the filter rules.
Delete	Once you have specified the serial number, click on this button to delete the filter rules in the table.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Destination MAC	Type in the Destination MAC address.
Create	Click on this button to create new filter rules in the table.

Ether Type Filtering

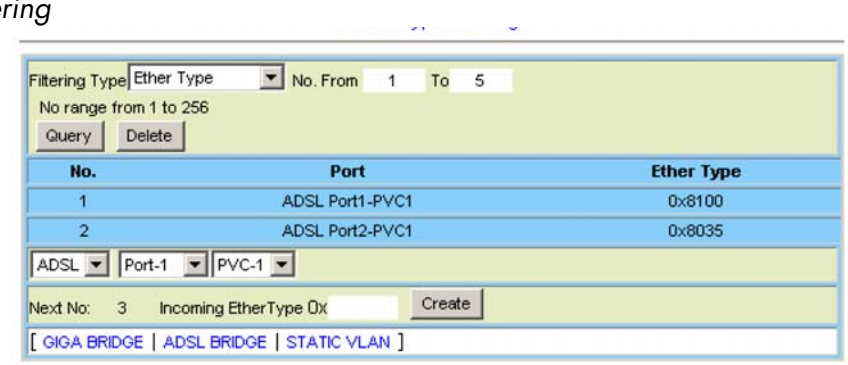


Figure 47. Ether Type Filtering pages

Table 24. Ether Type Filtering Settings

Label	Description
Filtering Type	Select the filtering type from the drop-down list.
No. From...To...	Type in the range of serial number in the filter rule table. Valid number value: 1 ~ 256.
Query	Once you have specified the serial number, click on this button to display the filter rules.
Delete	Once you have specified the serial number, click on this button to delete the filter rules in the table.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Incoming Ether Type	Type in the EtherType value (hexadecimal).
Create	Click on this button to create new filter rules in the table.

VLAN Priority Remark

This option allows you to configure the VLAN priority. From the **Bridge** menu, click on **Access Control** and then **VLAN Priority Remark**. The following page displays:

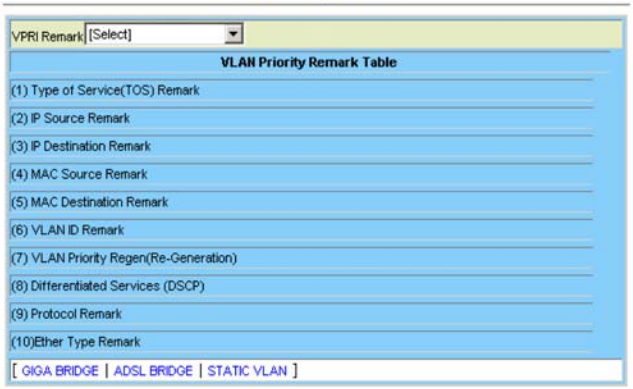


Figure 48. VLAN Priority Remark page

Click on the **VPRI Remark** drop-down list and select a type of VLAN Priority Remark, including TOS, IP Source, IP Destination, MAC Source, MAC Destination, VLAN ID, VLAN Priority Regeneration, Differentiated Services, Protocol, and Ether Type.

TOS

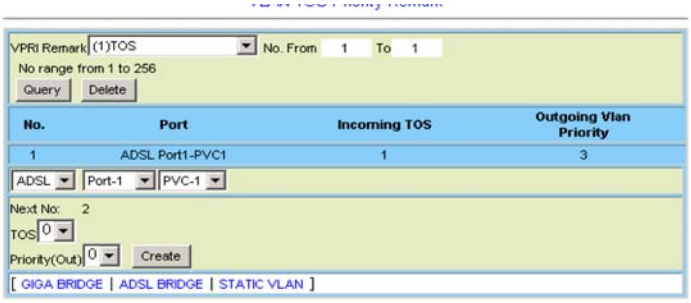


Figure 49. VLAN TOS Priority Remark page

Table 25. VLAN Priority Remark Settings - TOS

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.

Table 25. VLAN Priority Remark Settings - TOS

TOS	In order to provide basic support for classes of service to the Internet Protocol. The IP protocol header contains what is known as the ToS (Type of Service) bits. Click on the drop-down list and select incoming TOS (value range 0 ~ 7), then you can create the mapping between TOS and VLAN priority.
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create new filter rules in the table.

IP Source

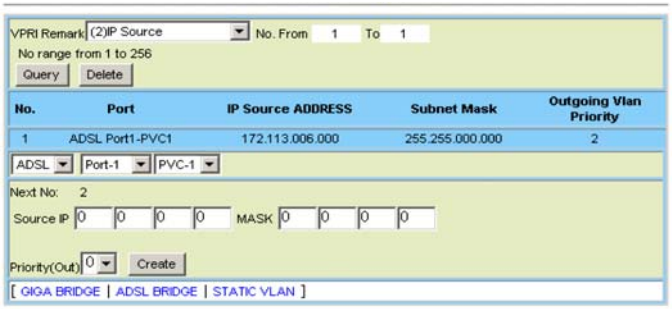


Figure 50. VLAN IP Source Priority Remark page

Table 26. VLAN Priority Remark Settings - IP Source

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Source IP	Enter the IP address of the incoming source.
MASK	Type in the subnet mask.
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create new filter rules in the table.

IP Destination

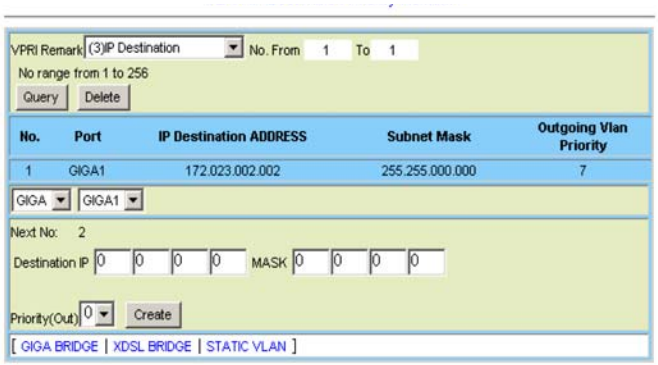


Figure 51. VLAN IP Destination Priority Remark page

Table 27. VLAN Priority Remark Settings - IP Destination

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Source IP	Enter the IP address of the incoming source.
MASK	Type in the subnet mask.
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create new filter rules in the table.

MAC Source

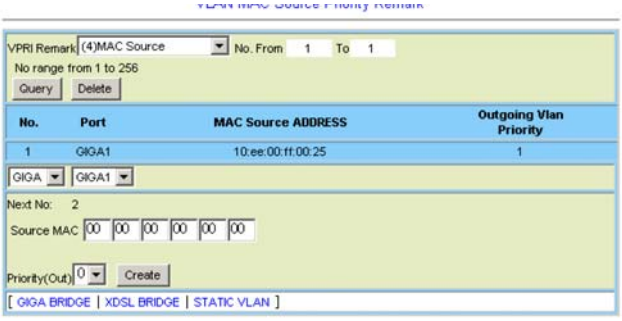


Figure 52. VLAN MAC Source Priority Remark page

Table 28. VLAN Priority Remark Settings - MAC Source

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Source MAC	Enter the MAC address of the incoming source.
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create new filter rules in the table.

MAC Destination

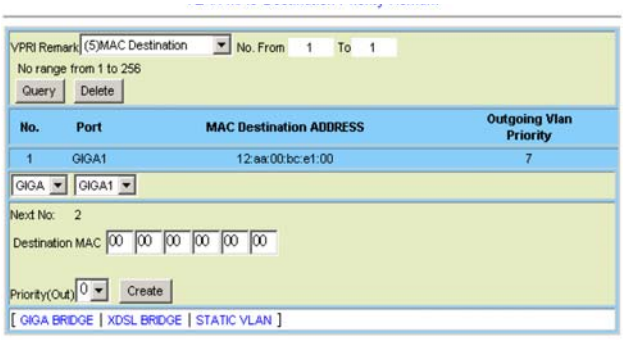


Figure 53. VLAN MAC Destination Priority Remark page

Table 29. VLAN Priority Remark Settings - MAC Destination

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Destination MAC	Enter the MAC address of the destination.
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create new filter rules in the table.

VLAN ID

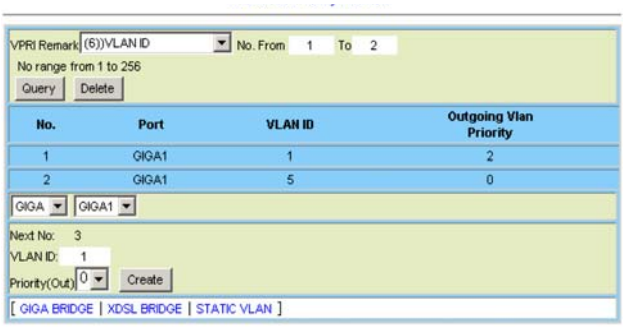


Figure 54. VLAN ID Priority Remark page

Table 30. VLAN Priority Remark Settings - VLAN ID

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
VLAN ID	Type in the VLAN ID (1 ~ 4094).
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create new filter rules in the table.

VLAN Priority Regeneration

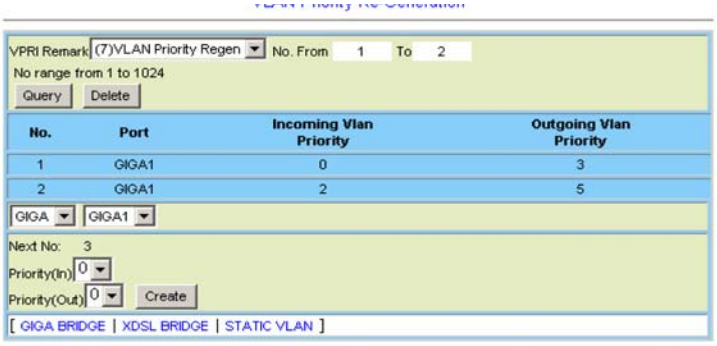


Figure 55. VLAN Priority Regeneration page

Table 31. VLAN Priority Remark Settings - VLAN Priority Regeneration

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Priority (In)	Click on the drop-down list and select the incoming VLAN priority (0 ~ 7).
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create new filter rules in the table.

Differentiated Services

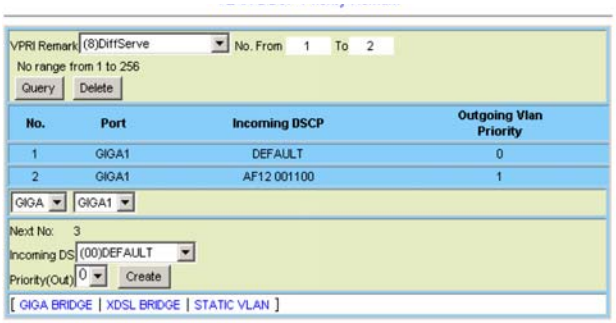


Figure 56. VLAN DSCP Priority Remark page

Table 32. VLAN Priority Remark Settings - Differentiated Services

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Incoming DS	Click on the drop-down list and select the incoming DSCP (Diffserv Code Points, which is a 6-bit number). The standardized combinations are listed below: default Default value (bits:000000) af11 Assured Forwarding Class 1:Low Drop (bits:001010) af12 Assured Forwarding Class 1:Medium Drop (bits:001100) af13 Assured Forwarding Class 1:High Drop (bits:001110) af21 Assured Forwarding Class 2:Low Drop (bits:010010) af22 Assured Forwarding Class 2:Medium Drop (bits:010100) af23 Assured Forwarding Class 2:High Drop (bits:010110) af31 Assured Forwarding Class 3:Low Drop (bits:011010) af32 Assured Forwarding Class 3:Medium Drop af33 Assured Forwarding Class 3:High Drop (bits:011110) af41 Assured Forwarding Class 4:Low Drop (bits:100010) af42 Assured Forwarding Class 4:Medium Drop (bits:100100) af43 Assured Forwarding Class 4:High Drop (bits:100110) ef Expedited Forwarding (bits:101110)
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create a new entry in the table.

Protocol

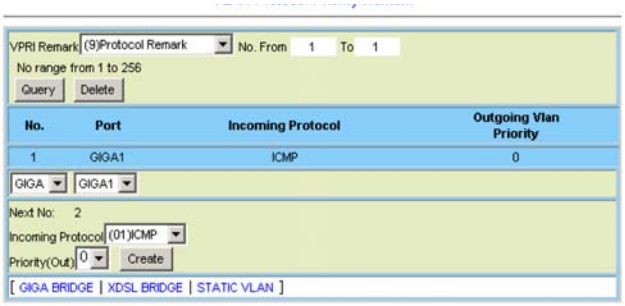


Figure 57. VLAN Protocol Priority Remark page

Table 33. VLAN Priority Remark Settings - Protocol

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Incoming Protocol	Click on the drop-down list and select the incoming protocol. Available options are: ICMP, IGMP, IP in IP, TCP, GRP, IGP, UDP, GRE, IGRP, or OSPF.
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create a new entry in the table.

Ether Type

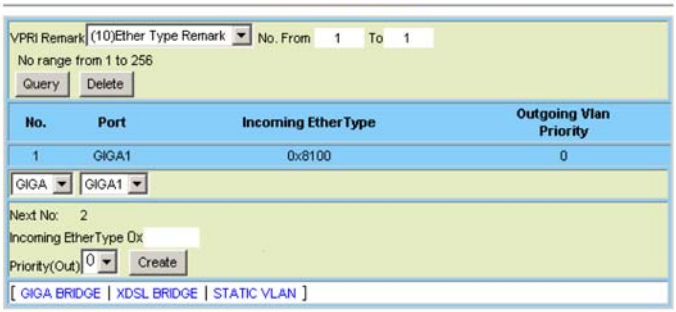


Figure 58. VLAN Ether Type Priority Remark page

Table 34. VLAN Priority Remark Settings - Ether Type

Label	Description
VPRI Remark	Select the priority remark type from the drop-down list.
No. From...To...	Type in the range of entry number in the table. Valid number value: 1 ~ 256.
Query	To query entries, type in the entry number range and then click on this button to retrieve.
Delete	To delete entries, type in the entry number range and then click on this button to delete.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Incoming Ether Type	Type in the EtherType value (hexadecimal).
Priority (Out)	Click on the drop-down list and select the outgoing VLAN priority (0 ~ 7).
Create	Click on this button to create a new entry in the table.

Rate Limit

This option allows you to limit the rate of broadcast/multicast packets that are received on a VLAN, and configure the Three Color Maring (TCM) Policer profile. From the **Bridge** menu, click on **Access Control** and then **Rate Limit**. The following page displays. Click on the **Rate Limit By** drop-down list and select the item you want to setup.

Figure 59. Rate Limit page

Rate Limit Broadcast

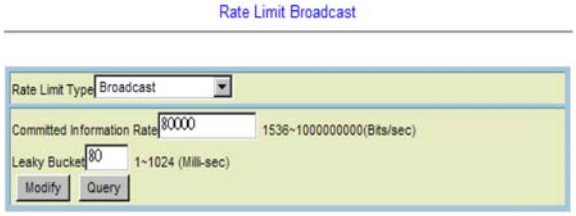


Figure 60. Rate Limit - Broadcast page

Table 35. Rate Limit - Broadcast Settings

Label	Description
Rate Limit Type	Click on this drop-down list and select the item you want to setup.
Committed Information Rate	Committed Information Rate (1536 ~ 1G bits per second). The threshold rate to turn on the rate-limit mechanism.
Leaky Bucket	Leaky bucket size. The unit is millisecond. This parameter ranges from 1 to 1024. The bucket depth is the product of CIR and this parameter.
Modify	Click on this button to modify data in the table.
Query	Click on this button to get most recent status.

Rate Limit Flooding

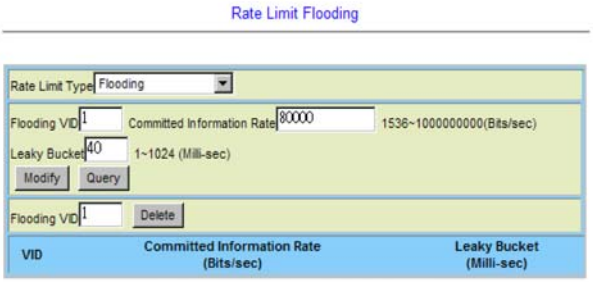


Figure 61. Rate Limit - Flooding page

Table 36. Rate Limit - Flooding Settings

Label	Description
Rate Limit Type	Click on this drop-down list and select the item you want to setup.
Flooding VID	Type in VLAN ID. (VID value: 1 ~ 4094) The VLAN must have been created in the static VLAN table.
Committed Information Rate	Committed Information Rate (1536 ~ 1G bits per second). The threshold rate to turn on the rate-limit mechanism.
Leaky Bucket	Leaky bucket size. The unit is millisecond. This parameter ranges from 1 to 1024. The bucket depth is the product of CIR and this parameter.
Modify	Click on this button to modify data in the table.
Query	Click on this button to get most recent status.
Delete	Click on this button to delete the entries in the table.

Rate Limit Policer

The Model 3124 supports two kinds of TCM Policer: two-rate TCM (with dual leaky buckets) and single-rate TCM (with single leaky bucket).

The single-rate TCM meters a traffic stream and marks its packets according to Committed Information Rate (CIR) and Committed Burst Size (CBS) to be either green, or red. The single-rate TCM operates with a single leaky bucket that is updated according to only one rate, the committed information rate - CIR. A packet is marked green if the leaky bucket is not full and red otherwise.

The two-rate TCM meters a traffic stream and marks its packets based on two rates, Committed Information Rate (CIR) and Excess Information Rate (EIR), and their associated burst sizes, Committed Burst Size (CBS) and Excess Burst Size (EBS), to be either green, yellow, or red. The two-rate TCM operates with dual leaky bucket, where each bucket is updated according to a different rate. The first bucket is updated according to the CIR, the second bucket is updated according to the EIR. A packet is marked red if it exceeds the PIR. Otherwise it is marked either yellow or green depending on whether it exceeds or doesn't exceed the EIR.

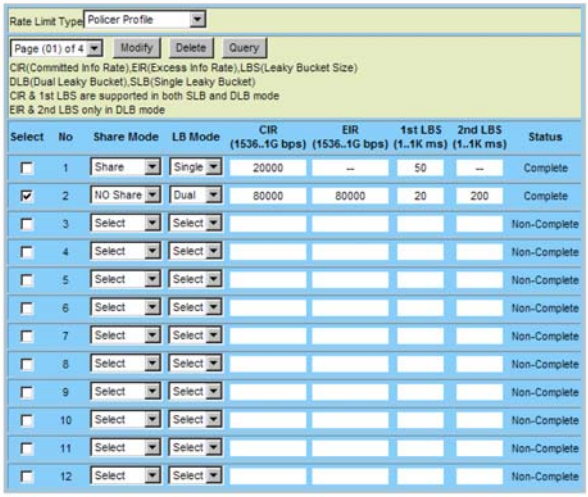


Figure 62. Rate Limit - Policer page

Table 37. Rate Limit Policer Settings

Label	Description
Rate Limit Type	Click on this drop-down list and select the item you want to setup.
Page List	Click on this drop-down list and select a page to be displayed.
Select	Select the checkbox when you want to create/modify/delete this entry.
Share Mode	Share mode: All the bridge ports which bind to the share mode policer profile will share the same Leaky Bucket defined by the CIR, EIR…parameters. So in Share mode, system only creates one Leaky Bucket for all the binding bridge ports. No Share mode: Every bridge port which bind to the non-share policer profile will have its own Leaky Bucket.
LB Mode	Single: Single Leaky Bucket. For SLB, there is one controlling parameter: CIR. Dual: Dual Leaky Bucket. For DLB, there are two controlling parameters: CIR and EIR.
CIR	Committed Information Rate (100 ~ 4294697295 bits per second). The threshold rate to turn on the rate-limit mechanism.
EIR	Excess Information Rate (1536 ~ 1G bits per second) controls the number of tokens in the second bucket (EBS bucket).
1st LBS	Leaky Bucket Size. The unit is millisecond. This parameter ranges from 1 to 1024. The first bucket depth is the product of CIR and this parameter.
2nd LBS	Leaky Bucket Size. The unit is millisecond. This parameter ranges from 1 to 1024. The second bucket depth is the product of EIR and this parameter.
Modify	Click on this button to modify data in the table.
Query	Click on this button to get most recent status.
Delete	Click on this button to delete the entries in the table.

Rate Limit Policer Binding Table

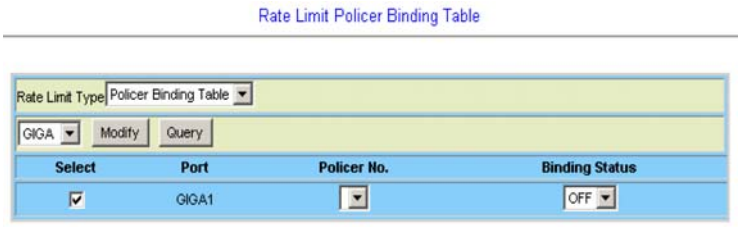


Figure 63. Rate Limit - Policer Binding Table

Table 38. Rate Limit Policer Binding Table Settings

Label	Description
Rate Limit Type	Click on this drop-down list and select the item you want to setup.
Select Port List	Click on these drop-down lists to select an ADSL bridge port or GIGA bridge port.
Modify	Once you have finished setting the parameter values, click on this button to submit the modification.
Query	Click on this button to get most recent data.
Select	Remember to select the checkbox when you want to modify this entry.
Policer No.	Click on the drop-down list and select the Policer profile you want to bind with this port.
Binding Status	Select to bind (ON) or unbind (OFF) the Policer profile.

Three Color Marking Policer

The Model 3124 supports TCM Policer in accordance with the Metro Ethernet Forum (MEF) Bandwidth Profile and RFCs 2697 & 2698. Our TCM Policer supports both Color Aware and Color Blind modes. The "color" is used for determining whether a packet will proceed to the policer when TCM Policer works in Color Aware mode; also in the policer the packet may be remarked with new color according to the packet's conformance to the policer rules. A packet is considered green when it enters the TCM Policer only if its input color field, VLAN priority bits or DSCP field, has the same value with the green value configured in this page (see the following figure and parameter description). Likewise, a packet is considered yellow only if its input color field has the same value with the yellow value configured in this page. All other values are considered red.

Once a packet has passed through the TCM Policer, it will be directed to the class queues for scheduling.

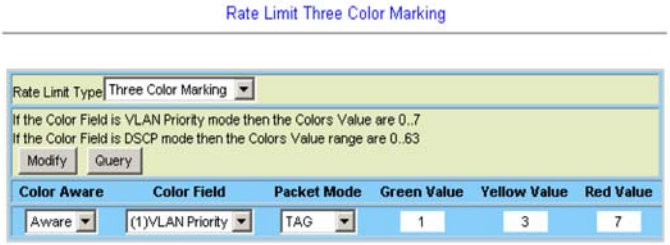


Figure 64. Three Color Marking page

Table 39. Three Color Marking Settings

Label	Description
Rate Limit Type	Click on this drop-down list and select the item you want to setup.
Modify	Click on this button to modify data in the table.
Query	Click on this button to get most recent data
Color Aware	Color aware mode: the packets are classified before they're sent through the policer. Color blind mode: the packets are directed through the entire policer regardless of their color.
Color Field	There are two fields you can select for determining the packet's input color: the VLAN priority bits within the Ethernet header or the DSCP field within the IP header.
Packet Mode	This parameter defines the action for non-conforming packets. You can choose Tag or Discard. If Tag is chosen, then all the packets will be marked as red in the Color field rather than be discarded.
Green Value	Type in the green color value that is used when determining a packet's input color (for Color Aware mode) or remarking a packet's output color as green. Valid value is 0 ~ 7 for VLAN Priority color field or 0 ~ 63 for DSCP color field.
Yellow Value	Type in the yellow color value that is used when determining a packet's input color (for Color Aware mode) or remarking a packet's output color as yellow. Valid value is 0 ~ 7 for VLAN Priority color field or 0 ~ 63 for DSCP color field.
Red Value	Type in the red color value that is used when remarking a packet's output color as red. Valid value is 0 ~ 7 for VLAN Priority color field or 0 ~ 63 for DSCP color field.

Priority Queue Mapping

This web page is used to select SPQ/WFQ/WRR queuing mechanism and to setup the mapping between VLAN priority levels and system internal queues. From the **Bridge** menu, click on **Access Control** and then **Priority Queue Mapping**. The following page displays:

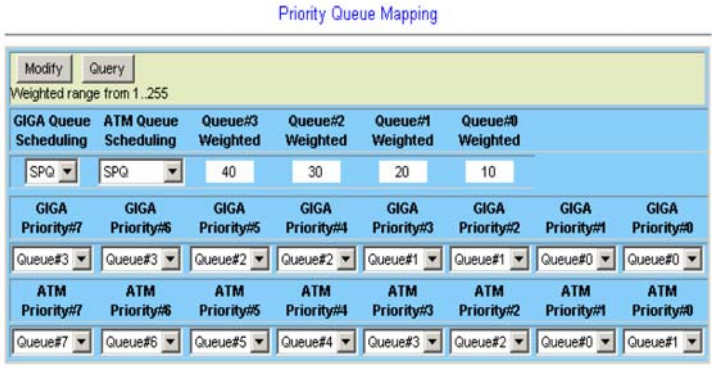


Figure 65. Priority Queue Mapping page

The queues for Giga and ATM interfaces are different.

- **Giga:** The Giga interface has 4 Queues and these queues can only work on Strict Priority Queuing (SPQ) scheduling. The priorities of these queues are: Q3 > Q2 > Q1 > Q0.
- **ATM:** Each ATM PVC bridge interface on each ADSL port has 8 Queues and can work in SPQ or SPQ/WFQ mix mode.

  For SPQ, the priorities of these queues are: Q7 > Q6 > Q5 > Q4 > Q3 > Q2 > Q1 > Q0.

  For SPQ/WFQ mixed, the priority of SPQ queues (Q7~Q4) is higher than WFQ queues (Q3~Q0).

  And:

  Q7 ~ Q4 are for SPQ and the priorities are Q7 > Q6 > Q5 > Q4.

  Q3 ~ Q0 are for WFQ (Weighted Fair Queuing) and you can define the weight value for Q3 ~ Q0.

Note that if each queue has different weight value, the system will work as WFQ mode. If all queues have the same weight value, the system will work as Weighted Round Robin (WRR) mode.

The system allows 8 priority levels fully work aQ0 only in the Priority Queue Mapping table.

Forwarding

TP Forwarding DB

This option allows you to configure the transparent forwarding database. The forwarding table will reveal the information of MAC addresses that are learned or statically configured on a specific bridge port. From the **Bridge** menu, click on **Forwarding** and then **TP Forwarding DB**. The following page displays:

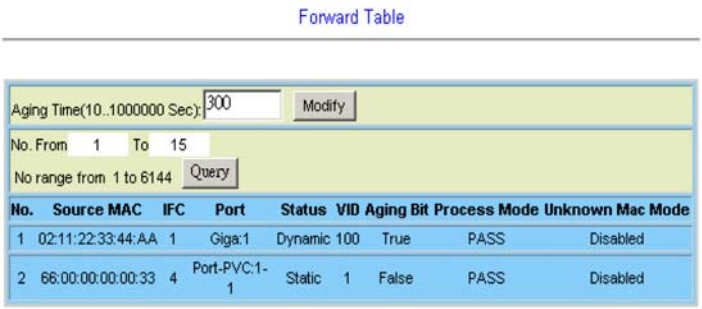


Figure 66. Transparent Forwarding Databse page

Table 40. Transparent Forwarding Database Settings

Label	Description
Aging Time	Type in the aging time in seconds. An entry will be removed from the FDB (aged-out) if the device does not transmit for a specified period of time (the aging time).
Modify	Click on this button to submit the modification.
No. From...To...	Select the range of entry number in the forwarding database.
Query	Once you have selected the entry number, click on this button to get the most recent status of MAC addresses forwarding.

Forwarding Static

This option allows you to configure the static MAC address forwarding entries on a specific bridge port. The setting of static MAC address takes effect on egress direction of bridge port. From the **Bridge** menu, click on **Forwarding** and then **Forwarding Static**. The following page displays:

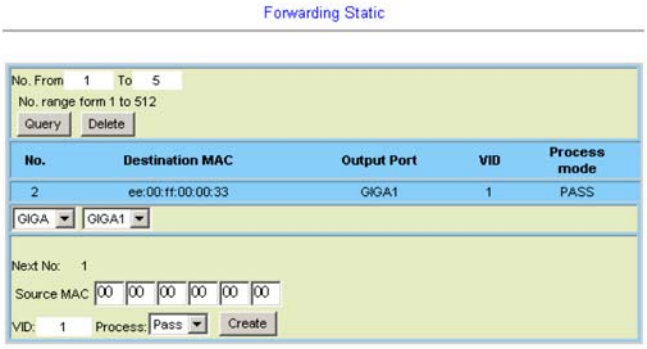


Figure 67. Forwarding Static page

Table 41. Forwarding Static Settings

Label	Description
No. From...To...	Select the range of entry number in the FDB. Valid number value: 1 ~ 513.
Query	Click on this button to display the FDB entries.
Delete	Delete the entries according to the entry number range you type in.
Select Port List	Click on these drop-down list to select a bridge port (ADSL bridge port or GIGA bridge port) where the static forwarding entries to be configured.
Source MAC	Type in the MAC address for the static entry.
VID	Type in the VID for the static entry (1 ~ 4094).
Process	Click on the drop-down list and select "Deny" the packets with the destination MAC address or "Pass" the packets with the destination MAC address.
Create	Click on this button to create a new entry.

Relay

DSL Line Identify

This option allows you to configure the DHCP option and PPPoE relay function. From the **Bridge** menu, click on **Relay** and then **DSL Line Identify**. The following page displays:

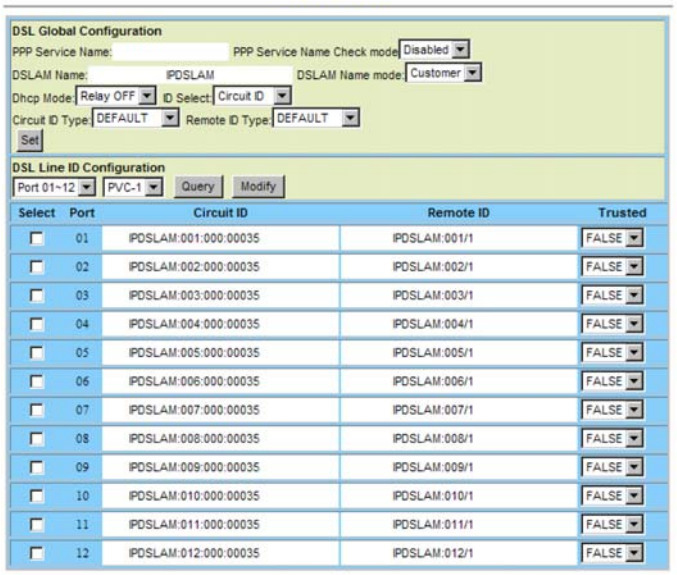


Figure 68. DSL Line Identify

Table 42. DSL Line Identify Settings

Label	Description
DSL Global Configuration	
PPP Service Name	Type in the PPPoE service name to add.
PPP Service Name Check Mode	Enable: the system will check whether the PPPoE service names from the PPPoE server and client are the same. If not the same, the PPP connection between server and client will not be established. Disable: the system will not check the PPPoE service name.
DSLAM Name	Type in name of the DSLAM when DSLAM Name mode is set to 'Customer'.
DSLAM Name Mode	Select the DSLAM name to be customer-defined or cluster name (Domain name:NE name).
DHCP Mode	Click on this drop-down list and select OFF/ON to disable/enable DHCP relay function.
ID Select	Click on this drop-down list and select the Relay Agent Information that is inserted to the forwarding packets. Options are: Circuit ID, Remote ID, or Both.
Circuit ID Type	Click on this drop-down list and select the type of Circuit ID. Options are: DEFAULT, CUSTOMER. DEFAULT means our system-defined default type (DSLAM name:circuit number); CUSTOMER means the customer-defined type.

Table 42. DSL Line Identify Settings

Remote Type	Click on this drop-down list and select the format of Remote ID. Options are: DEFAULT, Line ID (ADSL line identifier), Line Desc (description for the line), Line Phone (phone number), CUSTOMER. DEFAULT means our system default format, which is DSLAM name: port_id/bridge_id. CUSTOMER means the customer-defined format; customer can type in any word not exceeding 48 characters. For Line ID, the format is port_id/bridge_id:Port Identifier. For Line Desc, the format is port_id/bridge_id:Port Description. For Line Phone, the format is port_id/bridge_id:Port Phone Number. The Port Identifier, Description, and Phone Number are set in the ADSL line information table.
Set	Once you have changed the setting of any one of the parameters (Dhcp Mode, ID Select, CKT Type, Remote Type, DLSAM Name, Service Name), remember to click on Set to submit the modification.
DSL Line ID Configuration	
Bridge Port List	Click on these drop-down lists to select the bridge ports to be displayed (these bridge ports must have been created in previous web page).
Query	Click on this button to display table.
Modify	Click on this button to submit the modification of DSL line identify table.
Select Port	Bridge port index. Select the checkbox(s) corresponding to the circuit(s) of which you want to modify the setting.
Circuit ID	Type in the Circuit ID when CUSTOMER is selected for the CKT Type.
Remote ID	Type in the Remote ID when CUSTOMER is selected for the Remote Type.
Trusted	Click on this drop-down list and specify the circuit to be trusted (TRUE), or untrusted (FALSE; the relay agent will discard the DHCP packets from an untrusted circuit).

IGMP

IGMP Protocol & Router Port

This option allows you to setup the IGMP router port. From the **Bridge** menu, click on **IGMP** and then **Protocol & Router Port**. The IGMP Router Port page displays:

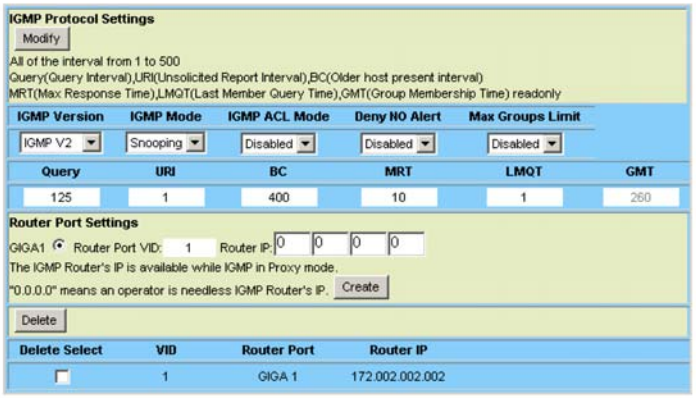


Figure 69. IGMP Protocol & Router Port page

Table 43. IGMP Router Port Settings

Label	Description
Modify	Click on this button to modify the IGMP configuration once you have set new values for the parameters.
IGMP Version	Select the IGMP version. Options are: IGMP OFF, IGMP V1, IGMP V2, and IGMP V3.
IGMP Mode	Select the IGMP mode. Options are: Snooping and Proxy.
IGMP ACL Mode	Disable or enable ACL mode. IGMP ACL profile (refer to section 4.7.2) will be effective only when ACL mode is enabled.
Deny No Alert	Enabled: the system will deny IGMP packets that have no router alert option in their IP header. Disabled: default value; the system will not care router alert option.
Max Groups Limit	Enabled: the system will limit the maximum active counter of IGMP groups can be joined (concurrently) for every bridge port. Disabled: the system will not limit the counter of IGMP groups can be joined for the bridge port.
Query 1~500(s)	The Query Interval is the interval between General Queries sent by the Querier. By varying this value, an administrator may tune the number of IGMP messages on the network; larger values cause IGMP Queries to be sent less often. Value range is 1 ~ 500. Default is 125 seconds.
URI 1~500(s)	The Unsolicited Report Interval is the time between repetitions of a host's initial report of membership in a group. Value range is 1 ~ 500. Default: 1 second.

Table 43. IGMP Router Port Settings

BC 1~500(s)	The Older Host Present Interval. It represents how long a host must wait after hearing a Version 1 Query before it may send any IGMPv2 messages. Default is 400 (sec).
MRT 1~500(s)	The burstiness of IGMP traffic is inversely proportional to the Max Response Time. A longer Max Response Time will spread Report messages over a longer interval. However, a longer Max Response Time in Group-Specific and Source-and-Group- Specific Queries extends the leave latency. (The leave latency is the time between when the last member stops listening to a source or group and when the traffic stops flowing.). Value range is 1 ~ 500. Default is 10.
LMQT 1~500(s)	The Last Member Query Interval is the Max Response Time used to calculate the Max Resp Code inserted into Group- Specific Queries sent in response to Leave Group messages. It is also the Max Response Time used in calculating the Max Resp Code for Group-and-Source-Specific Query messages. Value range is 1 ~ 500. Default is 1.
GMT 1~500(s)	Read-only value. The Group Membership Interval is the amount of time that must pass before a multicast router decides there are no more members of a group or a particular source on a network. This value MUST be ((the Robustness Variable) times (the Query Interval)) plus (one Query Response Interval).
GIGA1	Click on this radio button to select GBE as the IGMP router port.
Route Port VID	Route Port VID Type in the VID you want to setup/delete the router port for. Valid VID value is 1 ~ 4094.
Router IP	Type in IGMP router IP address. When working in IGMP proxy mode, DSLAM will send IGMP general query whose source IP address is 0.0.0.0. But PCs with Windows OS do not receive this kind of packets. So user can assign an IP address here for proxy mode IGMP general query packet reference.
Create	Click on this button to create a new entry.
Delete	Click on this button to delete an entry.

IGMP Profile

This option allows you to configure the IGMP ACL (Access Control List) profile. This profile defines the IGMP multicast channels, which are allowed to join for each ADSL port. That is, a multicast stream will be copied to an ADSL port only if that multicast stream is registered in the ACL profile that is bound to this ADSL port. The maximum number of IGMP multicast channels in an ACL profile is 256. Note that the same multicast channel can be existed concurrently in two or more ACL profiles.

The ACL profile will be referred to only when ACL mode is enabled in the IGMP Configuration page. From the **Bridge** menu, click on **IGMP** and then **ACL Profile**. The following page displays:

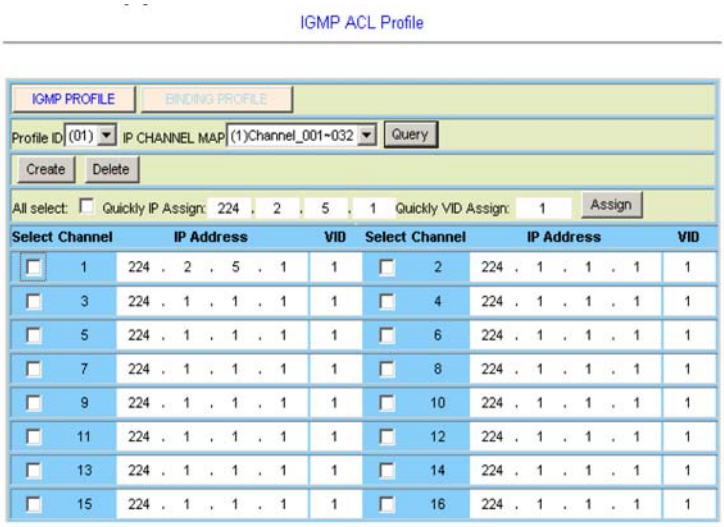


Figure 70. IGMP ACL Profile

Table 44. IGMP ACL Profile - Profile Configuration

Label	Description
Profile ID	Click on this drop-down list and specify the profile ID. Valid value is 01 ~ 15.
IP CHANNEL MAP	Click on this drop-down list and select the channel index range. Options are: Channel 001~032, Channel 033~064, …, Channel 225~256.
All select	Click on this checkbox to select all channels in this page at one time. This is convenient for quick value assignment.
Quickly IP Assign	Type the IGMP group IP address here for quick assignment. Click on Assign button to put the value into the table. Then you can modify parts of the IP addresses directly in the table.
Quickly VID Assign	Type the IGMP group IP address here for quick assignment. Click on Assign button to put the value into the table.
Assign	Click on this button to apply the parameter values you have just entered. But these values haven't been really saved in the database. You must click on Create to save the values. Once the setting has been saved, you cannot modify the values. You must delete the channel and then create again.
Select	Click on this checkbox to select the channel you want to create, delete, or assign values.
IP Address	Type in the IGMP group address. Valid values: 224.0.0.0 ~ 239.255.255.255. The range of addresses from 224.0.0.0 to 224.0.0.255 is reserved for the use of routing protocols and other low-level topology discovery or maintenance protocols.
Query	Click on this button to display current channels in the profile.
Create	Click on this button to create new channels (IGMP group address).
Delete	Click on this button to delete channel(s) (IGMP group address).

Table 45. IGMP ACL Profile - Profile Binding Settings

Label	Description
Bridge Port List	Click on these drop-down lists to select a line bridge port.
All Select	Click on this checkbox to select all ports in this page at one time. This is convenient for quickly value assignment.
Quickly Max Group Assign	This field is for quick value assignment (assign the same value to all the ports in current page at one time). Type in the maximum IGMP groups can be joined simultaneously per line port, and then click on Assign to put the value into the table.
Quickly Profile ID Assign	Click on this drop-down list to select the profile ID you want to bind. This is for quick value assignment.
Quickly Binding Assign	Click on this drop-down list to select the binding action. This is for quick value assignment. Options are: off – unbind the profile, on – bind the profile, reset – rebind the profile.

Table 45. IGMP ACL Profile - Profile Binding Settings

Assign	Click on this button to apply the parameter values you have just entered (or selected). But these values haven't been really saved in the database. You must click on Modify to save the values.
Modify	Click on this button to submit the modification.
Port	Click on the checkbox to select the port you want to modify or assign values.
Max Groups	You can type in the maximum IGMP groups can be joined simultaneously to limit the concurrent multicast channels for a bridge port. This value is effective only when the limit maximum IGMP groups function is enabled.
Profile ID	You can select the profile ID you want to bind here.
Binding Status	You can select the binding action here.

IGMP Multicast

This option allows you to query the IGMP multicast status. From the **Bridge** menu, click on **IGMP** and then **IGMP Multicast**. The **IGMP Group** page displays. Click on the **IGMP Type** drop- down list and select Group or Source.

IGMP Type > Group: Click on **List** by drop-down list to select listing by Number or listing by VID & Group IP.

List by Number

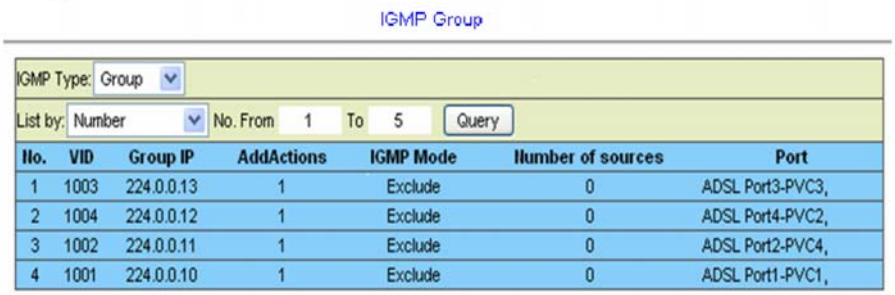


Figure 71. IGMP Group - List by Number page

Table 46. IGMP Group - List by Number Settings

Label	Description
No. From...To...	Type in the entry number range in the table.
Query	Click on this button to display the table entries.

List by VID & Group IP

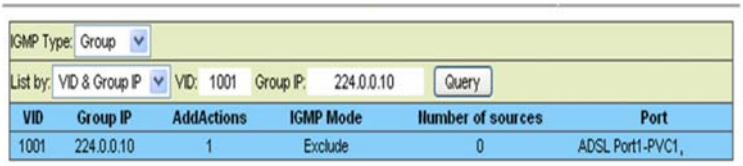


Figure 72. IGMP Group - List by VID & Group IP page

Table 47. IGMP Group - List by VID & Group IP Settings

Label	Description
VID	Type in the VLAN ID (1~ 4094).
Group IP	Type in the IGMP group IP address.
Query	Click on this button to display the table entries.

IGMP Source

IGMP Type > Source: This option allows you to query the **Source IP**, which is the IP address of the source that is joining a multicast group on an interface. This option is available only when IGMP version 3 is selected for the system's IGMP configuration (see "IGMP Multicast" on page 73).

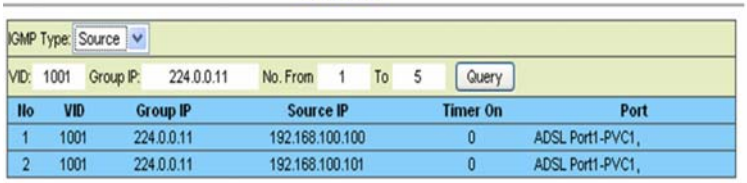


Figure 73. IGMP Source page

Table 48. IGMP Source Settings

Label	Description
VID	Type in the VLAN ID (1~ 4094).
Group IP	Type in the IGMP group IP address.
No. From...To...	Type in the entry number range in the table.
Query	Click on this button to display the table entries.

IPOA

BRAS MAC

The Model 3124 supports an IPOA/IPOE IWF (Interworking Function). This option allows you to setup the BRAS MAC address that is used by the IPOA/IPOE IWF. From the **Bridge** menu, click on **IPOA** and then **BRAS MAC**. The following page displays.

To add/modify a MAC:

Select a checkbox beside an index and type in BRAS MAC address, and then click on Modify button.

To delete a MAC:

Select a checkbox (checkboxes) beside the index and then click on Delete button:

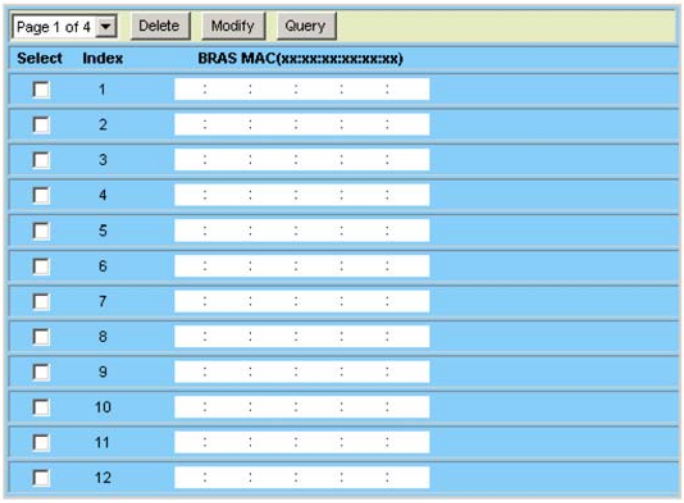


Figure 74. IPOA BRAS MAC

Interface Setup

This option allows you to setup the interface for IPoA/IPoE IWF. From the **Bridge** menu, click on **IPOA** and then **Interface Setup**. The following page displays. Click on the radio button to select a circuit, set values for the parameters, and then click on **Modify** button.

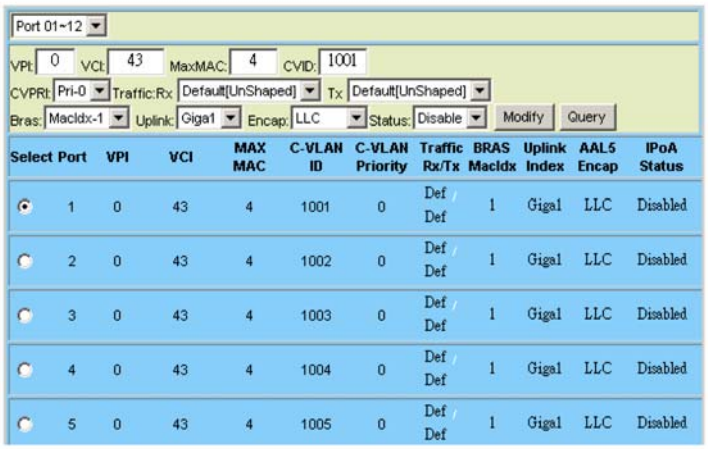


Figure 75. IPOA Interface Setup page

Table 49. IGMP Source Settings

Label	Description
Line Port List	Click on the drop-down list and select the line ports to be listed.
VPI	Type in the VPI. Value range is 0 ~ 255.
VCI	Type in the VCI. Value range is 21, 32 ~ 65535.
MaxMAC	Type in the maximum number of MAC addresses that can be learned by the bridge port (for GBE interface: 1 ~ 4096, for DSL interface: 1 ~ 128).
CVID	Type in the VID value of C-Tag (the innermost VLAN tag as defined in IEEE 802.1ad and having an EtherType value of 0x8100). The C-VID indicates the access loop.
CVPRI	Click on the drop-down list and select the VLAN priority level of C-Tag (Pri-0 ~ 7).
Traffic (Rx/Tx)	Click on the drop-down lists and select a traffic type for transmit and receive direction respectively. Available options are created in the ATM Traffic Descriptor page.
BRAS	Click on the drop-down list and select a BRAS MAC. Available options are created through "BRAS MAC" on page 75.
Uplink	Click on the drop-down list and select the uplink interface.
Encap	Select AAL5 Encapsulation Type: VCMUX/LLC
Status	Enable/Disable IPoA IWF.
Modify	Click on this button to submit the modification.
Query	Click on this button to query most recent data.

Chapter 4 ADSL Configuration

Chapter contents

Profile....78
Line Service Profile....78
Service Channel Profile....79
Spectrum Main Profile....80
Spectrum ADSLx Profile....83
ADSL TCA Profile....84
Data & Inventory....85
Inventory....85
Loop Test....86
Test in progress....86
Test completed....86
Carrier Data....90
OP Data....91
Line Operational Data....91
Channel Operational Data....91
Line Config & Info....92
Line Configuration....92
Line Information....93

Profile

Line Service Profile

This option allows you to configure the ADSL line service profile. From the **ADSL** menu, click on **Profile**, and then **Service Profile (main)**. The following page displays:

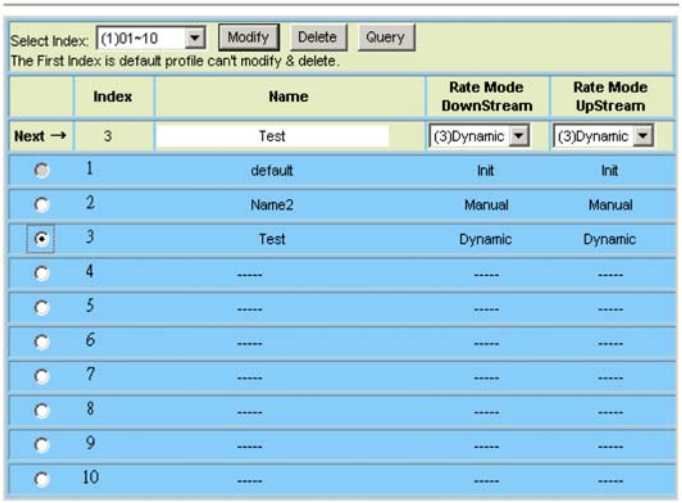


Figure 76. ADSL Line Service Profile page

Table 50. ADSL Line Service Profile Settings

Label	Description
Select Index	Click on the drop-down list and select the range of profile index. Options are: 0~10, 11~20, ..., 111~120.
Index	This field shows the profile index. Click on the radio button beside the profile index to select the profile you want to modify or delete. Note that profile 1 (default) cannot be modified or deleted.
Name	Type in the name of the profile.
Rate Mode Downstream	Click on the drop-down list and select the Downstream Rate Adaptive Mode. Valid options are: Manual - Rate changed manually Init - Rate automatically selected at start up only and does not change after that Dynamic - Rate automatically selected at initialization and is continuously adapted during operation (show time).
Rate Mode Upstream	Click on the drop-down list and select the Upstream Rate Adaptive Mode. Valid options are: Manual - Rate changed manually Init - Rate automatically selected at start up only and does not change after that Dynamic - Rate automatically selected at initialization and is continuously adapted during operation (show time).

Service Channel Profile

This option allows you to configure the ADSL service channel profile. From the **ADSL** menu, click on **Profile** and then **Service Profile (Channel)**.The following page displays:

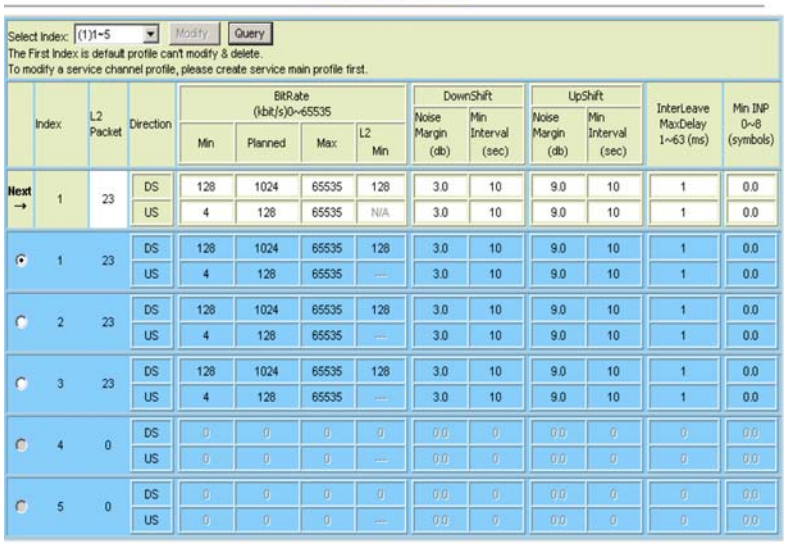


Figure 77. ADSL Service Channel Profile page

Table 51. ADSL Service Channel Profile Settings

Label	Description
Select Index	Click on the drop-down list and select the range of profile index. Options are: 0~10, 11~20, ..., 111~120.
Index	This field shows the profile index. Click on the radio button beside the profile index to select the profile you want to modify or delete. Note that profile 1 (default) cannot be modified or deleted.
L2 Packet	This is a threshold value that is the minimum packet size before the system leaving the L2 low power state. Valid value is 0~32.
Direction	DS: downstream. US: upstream.
BitRate	Min: Minimum bit rate during show time Planned: Planned bit rate during setup Max: Maximum bit rate during show time L2 Min: Minimum bit rate during L2 low power state
DownShift Noise Margin (dB)/ Min Interval (sec)	Decrease net data rate if Noise Margin is below than the Downshift Noise Margin for DownShift Min Interval.
UpShift Noise Margin (dB)/Min Interval (sec)	Increase net data rate if Noise Margin is above than the Upshift Noise Margin for Upshift Min Interval.
Interleaving MaxDelay	Maximum interleaving delay (1~63 ms)
IMP 0~8 (symbols)	Minimum impulse noise protection (0.0~8.0 dB)

Spectrum Main Profile

This option allows you to configure the ADSL spectrum profile. From the **ADSL** menu, click on **Profile** and then **Spectrum Profile (main)**. The following page displays:

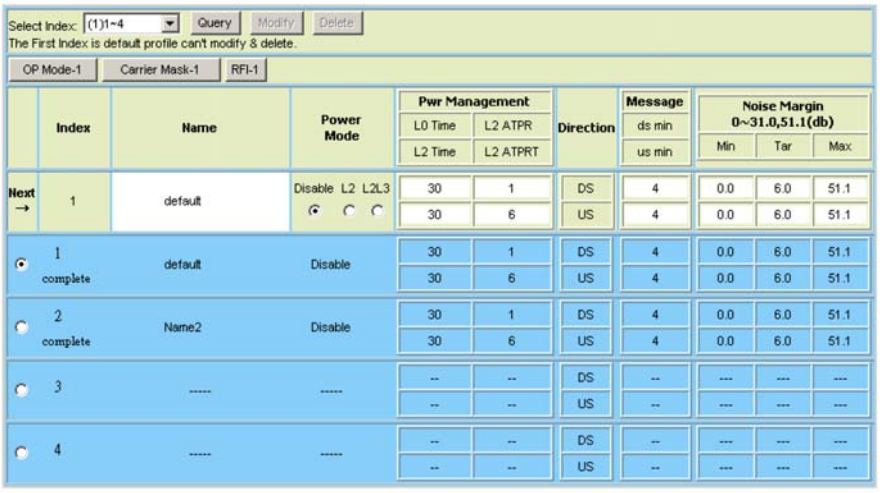


Figure 78. ADSL Spectrum Profile page

Table 52. ADSL Spectrum Profile Settings

Label	Description
Select Index	Click on the drop-down list and select the range of profile index. Options are: 0~10, 11~20, ..., 111~120.
Index	This field shows the profile index. Click on the radio button beside the profile index to select the profile you want to modify or delete. Note that profile 1 (default) cannot be modified or deleted.
Name	Type in the name of the profile.
Power Mode	Click on the radio button to select allowed power management mode. Options are Disable (only L0 state allowed), L2 (L0 and L2 states allowed), L2L3 (L0, L2, and L3 states allowed).
L0 Time	Type in the minimum time (in seconds) between Exit from L2 low power state and the next Entry into the L2 low power state. Value range is 0 ~ 255.
L2 Time	Type in the minimum time (in seconds) between an Entry into L2 low power state and the first L2 low power trim request, and between two consecutive L2 power trim requests. Value range is 0 ~ 255.
L2 ATPR	Type in the maximum aggregate transmit power reduction (in dB) that is allowed at transition of L0 to L2 state or an L2 low power trim request. Value range is 0 ~ the value of L2 ATPRT (dB).
L2 ATPRT	Type in the total maximum aggregate transmit power reduction (in dB) that is allowed in the L2 state; the total reduction is the sum of all reductions of L2 Request (i.e., at transition of L0 to L2 state) and L2 power trims. Value range is 0 ~ 15 (dB).
Direction	DS: downstream. US: upstream.

Table 52. ADSL Spectrum Profile Settings

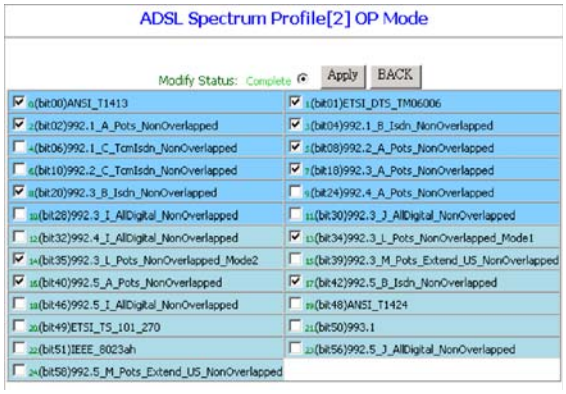
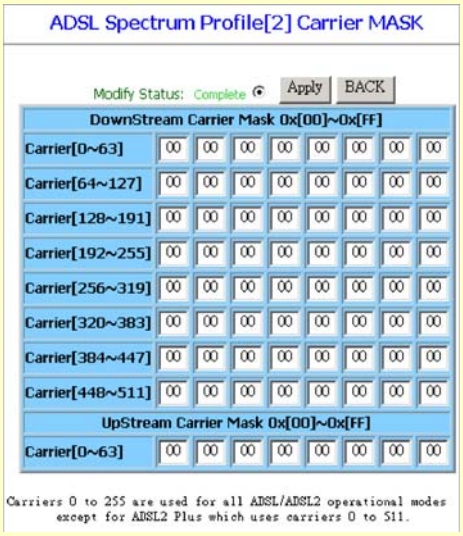
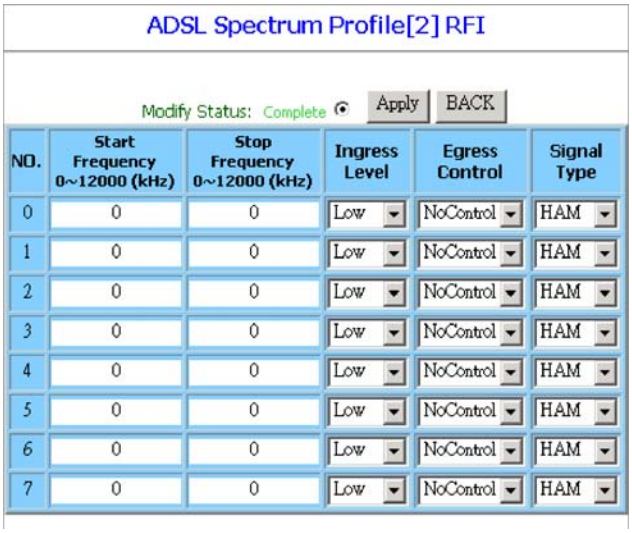
Message	Type in the minimum rate of the message-based overhead that shall be maintained by the ATU in upstream/downstream direction. Value range is 4 ~ 28k bit/s.
Noise Margin	Type in the Noise Margin values. Min: Minimum noise margin (0.0~31.0,51.1db, default 0.0) Tar: Target noise margin (0.0~31.0,51.1db, default 6.0) Max: Maximum noise margin (0.0~31.0,51.1db, default 51.1)
Modify	Click on this button to submit the modification
Delete	Click on this button to delete a profile
Query	Click on this button to display the profiles.
OP Mode-N	Click on this button to view/modify allowed ADSL modes of operation for the profile. The following page displays. An OP Mode is supported if the check box is selected. Modify Status: Complete - modems will re-train after you click on Apply button 

Table 52. ADSL Spectrum Profile Settings

Carrier Mask-N	Click on this button to view/modify the current downstream/upstream Carrier Mask parameters. Input Carrier bit value and then click Apply. Modify Status: Complete - modems will re-train after you click on Apply button 
RFI-N	Click on this button to view/modify Radio Frequency Interference (RFI) Bands data. Input the Start/Stop frequency, select the Ingress Level, Egress Control, Signal Type, and then click on the Apply button. Modify Status: Complete - modems will re-train after you click on Apply button 

Spectrum ADSLx Profile

This option allows you to configure the ADSL2/2+/READSL spectrum profile. From the **ADSL** menu, click on **Profile** and then **Spectrum Profile (ADSLx)**. The following page displays:

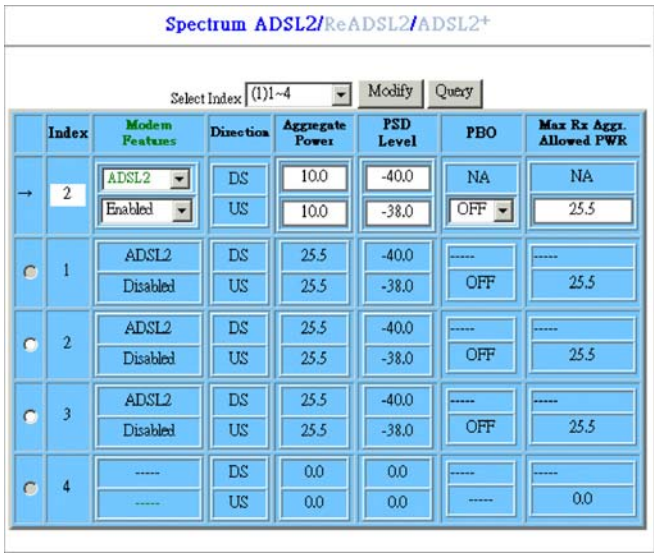


Figure 79. ADSL Spectrum ADSLx Profile page

Table 53. ADSL2 Spectrum Profile Settings

Label	Description
Select Index	Click on the drop-down list to select the range of profile index. Options are: 1~4, 5~8, ..., 117~120.
Index	This field shows the profile index.
Modem Features	Select ADSL2/ReADSL2/ADSL2+ and Enable/Disable special modem functions for better performance.
Direction	DS: downstream. US: upstream
Aggregate Power	Maximum nominal aggregate transmit power (0~25.5dB)
PSD Level	Maximum PSD level. Valid values are: ADSL2: -60 ~ -40 dB/Hz DS, -60 ~ -38 dB/Hz US ReADSL2: -60 ~ -37 dB/Hz DS, -60 ~ -32.9 dB/Hz US ADSL2+: -60 ~ -40 dB/Hz DS, -60 ~ -38 dB/Hz US
PSD Shape	Only for ADSL2+. Valid options are: Standard/CA100/CA110/CA120/CA130/CA140/CA150/ CA160CA170/CA180/CA190/CA200/CA210/CA220/CA230/CA240/CA250/CA260/CA270/CA280
PBO	Power backoff operation mode (OFF/ON).
Max Rx Aggr. Allowed PWR	Maximum aggregate receive power over a set of subcarriers. It ranges from -25.5 to +25.5 dBm, with 0.1 dB steps.

ADSL TCA Profile

This option allows you to setup the PM counter threshold for TCA (threshold crossing alert). From the **ADSL** menu, click on **Profile** and then **TCA Profile**. The following page displays:

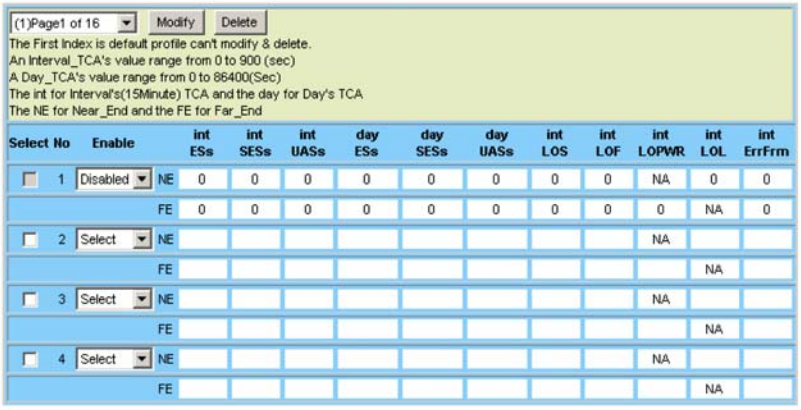


Figure 80. ADSL TCA Profile page

Table 54. ADSL TCA Profile Settings

Label	Description
Page List	Click on this drop-down list to select the page to be displayed.
Modify	Once you have typed in new threshold values, click on this button to submit the modification.
Delete	Click on this button to delete a selected profile (or profiles).
Select	Click on the checkbox to select the profile you want to modify or delete.
Enable	To issue TCA when the PM statistics exceed thresholds, this profile must be enabled.
int/day ESs-NE/FE	Interval/Day Errored Seconds – near end/far end
int/day SESs-NE/FE	Interval/Day Severely Errored Seconds – near end/far end
int/day UASs-NE/FE	Interval/Day Unavailable Seconds – near end/far end
int LOS-NE/FE	Interval Loss of Signal – near end/far end
int LOF-NE/FE	Interval Loss of Frame – near end/far end
int LOPWR-FE	Interval Loss of Power – far end
int LOL-NE	Interval Loss of Link – near end
int ErrFrm-NE/FE	Interval Error Frame – near end/far end

Data & Inventory

Inventory

This option allows you to view the inventory of the ATUC and ATUR. From the **ADSL** menu, click on **Data & Inventory**. The following page displays:

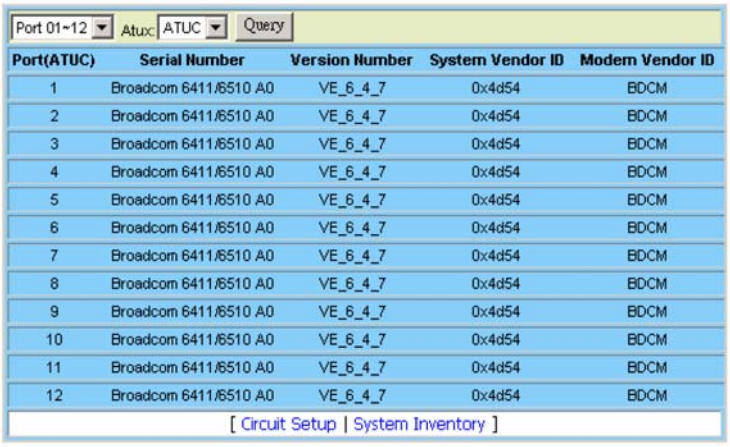


Figure 81. ADSL Inventory page

Table 55. ADSL Inventory Settings

Label	Description
Port List	Click on this drop-down list and select the ports to display.
Atux	Select ATUC or ATUR inventory to display in the table.
Query	To view the inventory, click on this button once you have selected the port and ATUx.

Loop Test

This option allows you to do the ADSL Dual End Loop Test. From the **ADSL** menu, click on **Data & Inventory**, and then **Loop Test**. The following page displays:

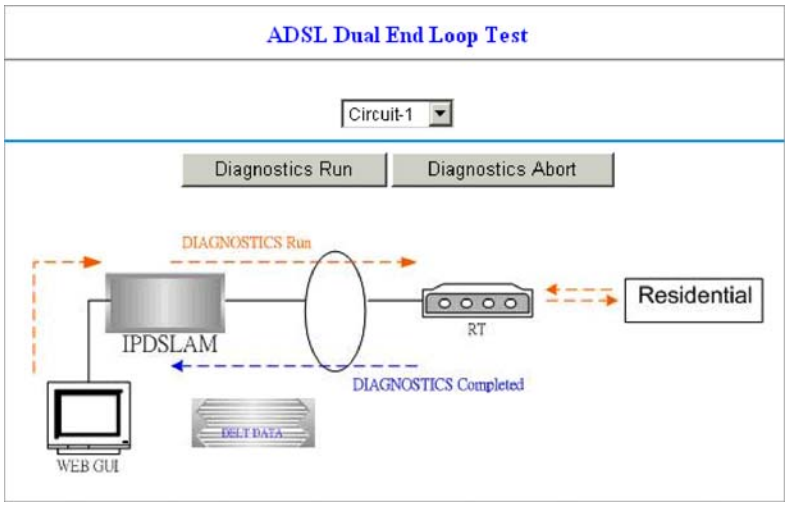


Figure 82. ADSL Loop Test page

Click on the drop-down list and select the circuit you want to test. Then click on **Diagnostics Run** to start a DELT. If you want to stop the test or make the loop go back to the normal state when the test has finished, just click on **Diagnostics Abort**.

Test in progress

Click on **Diagnostics Run** and then the following page displays:

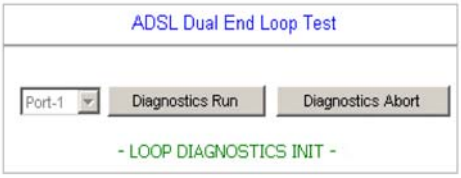


Figure 83. ADSL Loop Test in progress

Test completed

When the test is completed successfully, the test results will display as shown in Figure 84 on page 87, Figure 85 on page 88 and Figure 86 on page 89.

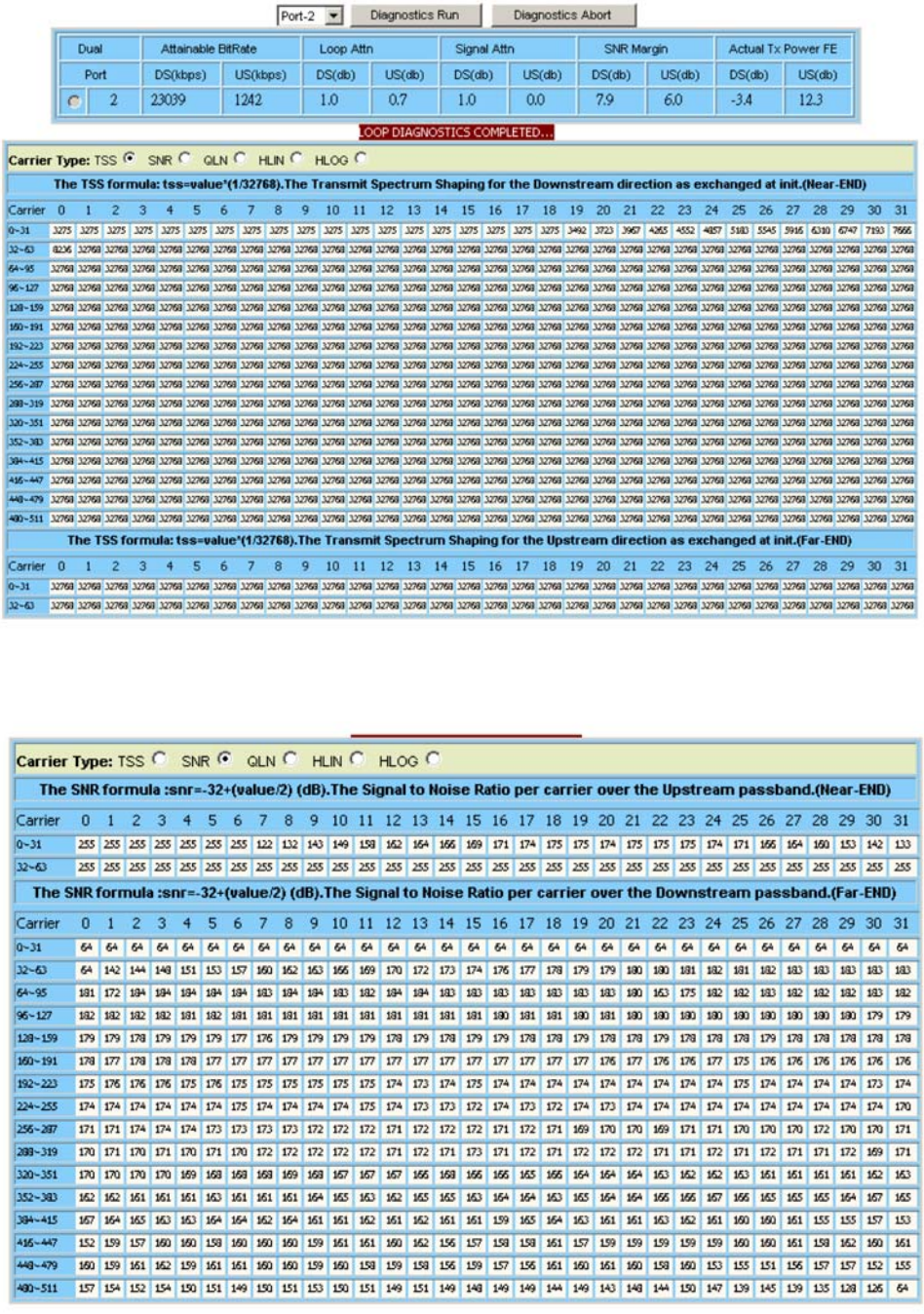
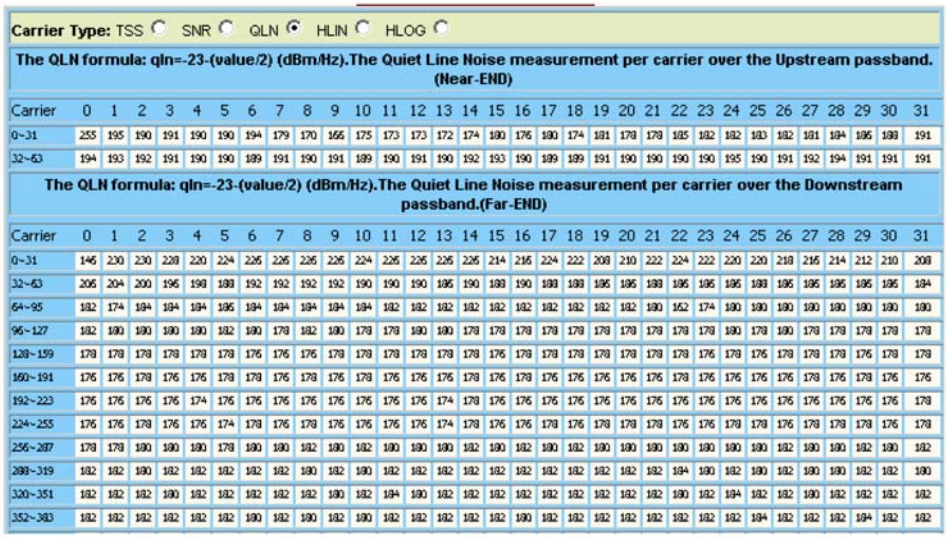


Figure 84. ADSL Loop Test Results



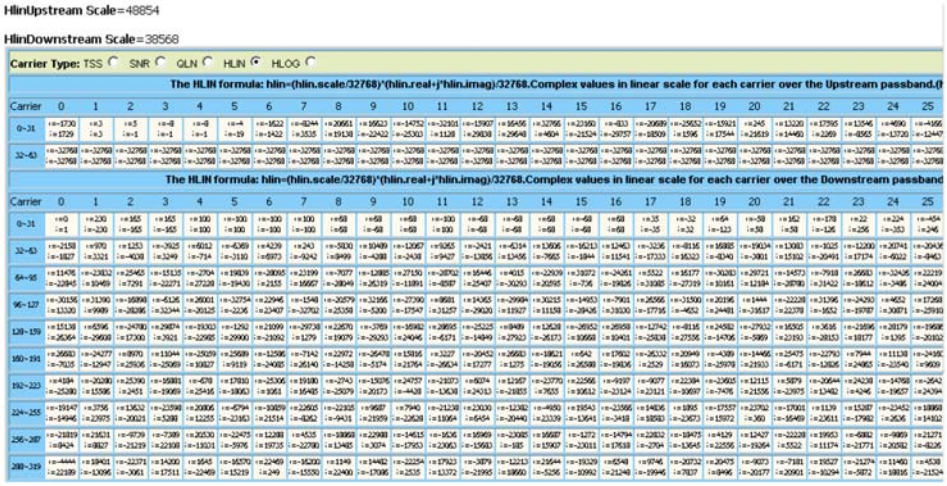
Carrier Type: TSS ○ SNR ○ QLN ◉ HLIN ○ HLOG ○

The QLN formula: qln=-23-(value/2) (dBm/Hz).The Quiet Line Noise measurement per carrier over the Upstream passband. (Near-END)

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0~31	255	195	190	191	190	190	194	179	170	166	175	173	173	172	174	180	176	180	174	181	178	178	185	182	182	183	182	181	184	186	188	191
32~63	194	193	192	191	190	190	189	191	190	191	189	190	191	190	192	193	190	189	189	191	190	190	190	190	195	190	191	192	194	191	191	191

The QLN formula: qln=-23-(value/2) (dBm/Hz).The Quiet Line Noise measurement per carrier over the Downstream passband.(Far-END)

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0~31	146	230	230	228	220	224	226	226	226	226	224	226	226	226	226	214	216	224	222	208	210	222	224	222	220	220	218	216	214	212	210	208
32~63	206	204	200	196	198	188	192	192	192	192	190	190	190	196	190	188	190	188	188	188	196	196	188	196	196	196	188	196	196	196	196	184
64~95	182	174	184	184	184	186	184	184	184	184	184	182	182	182	182	182	182	182	182	182	182	180	162	174	180	180	180	180	180	180	180	180
96~127	182	180	180	180	180	182	180	178	182	180	178	178	180	180	178	178	178	178	178	178	178	178	178	178	180	178	180	178	178	178	178	178
128~159	178	178	178	178	178	178	176	176	178	178	178	178	178	176	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178	178
160~191	176	176	178	176	176	178	178	176	178	176	178	176	176	176	178	176	178	176	176	176	176	176	178	176	176	176	176	178	176	178	176	176
192~223	176	176	176	176	174	176	176	176	176	176	176	176	174	178	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	178
224~255	176	176	178	176	176	174	178	176	178	176	176	176	176	174	178	176	176	178	176	178	178	178	176	176	178	178	176	178	178	178	176	178
256~287	178	178	180	180	180	178	180	180	182	180	182	180	180	180	182	180	182	180	182	180	180	180	180	180	180	182	180	180	180	182	180	182
288~319	182	182	180	182	182	182	182	182	180	182	180	182	182	182	182	182	182	182	182	182	182	182	184	180	182	180	182	180	180	182	182	180
320~351	182	182	182	180	182	182	182	182	182	180	182	184	180	182	182	182	182	182	182	182	182	180	182	184	182	182	180	182	182	182	182	182
352~383	182	182	182	182	182	182	180	182	180	182	180	182	182	182	182	182	180	182	182	182	182	182	182	182	184	182	182	182	182	184	182	182



HlinUpstream Scale=48854

HlinDownstream Scale=38568

Carrier Type: TSS ○ SNR ○ QLN ○ HLIN ◉ HLOG ○

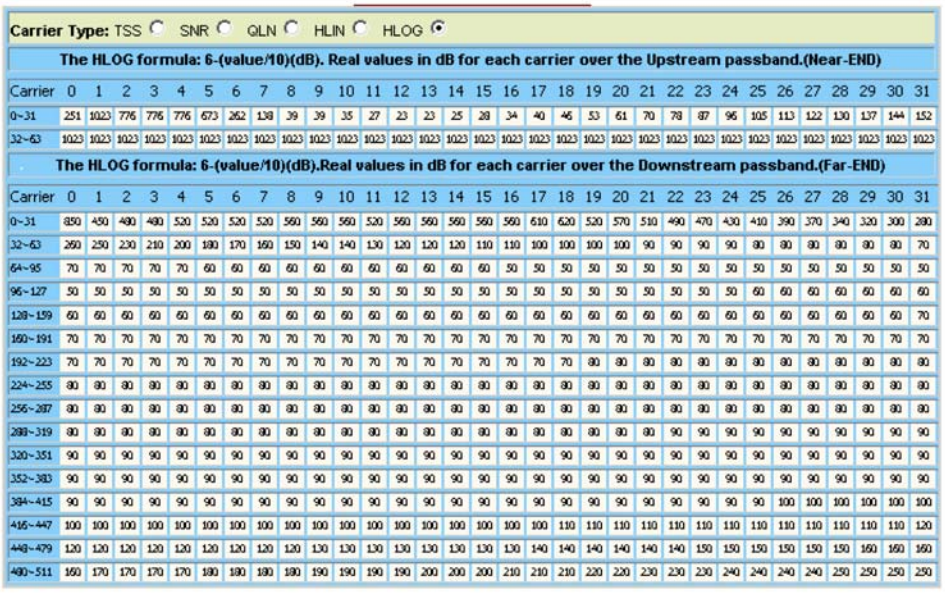
The HLIN formula: hlin=(hlin.scale/32768)*(hlin.real+j*hlin.imag)/32768.Complex values in linear scale for each carrier over the Upstream passband.(

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
0~31	-1730 i729	-3 i3	-5 i-1	-8 i-1	-8 i-1	-4 i-19	-1622 i1422	-8244 i1535	-20661 i19138	-16623 i-22422	-14752 i-25303	-32101 i1128	-15907 i29838	-16456 i29648	-32766 i4604	-23350 i-21524	-833 i-29757	-20689 i-18509	-25652 i1596	-15921 i17544	-245 i21619	-13220 i14460	-17595 i2269	-13546 i-8565	-4690 i-17220	-4466 i-12447
32~63	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768	-32768 i-32768

The HLIN formula: hlin=(hlin.scale/32768)*(hlin.real+j*hlin.imag)/32768.Complex values in linear scale for each carrier over the Downstream passband

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
0~31	+0 +1	+220 +-220	+165 +-165	+165 +-165	+100 +-100	+100 +-100	-100 +100	+100 +-100	+68 +-68	+68 +-68	+68 +-68	-100 +100	-68 +68	+68 +-68	+68 +-68	+68 +-68	+68 +-68	+68 +-68	+35 +-35	-32 +32	+64 +-123	+58 +58	+162 +-126	+178 +-178	+22 +-256	+224 +-353	-454 +246
32~63	+-2158 +-1827	+970 +-1321	+1253 +-4038	-3925 +3249	+6012 +-714	+6369 +-2110	+4239 +-8973	+243 +-8242	-5830 +9999	+10489 +-4288	-12067 +2438	+9365 +-9427	+2421 +-12806	+6314 +13456	+13606 +-7665	+16213 +-1844	+12462 +11541	+3236 +-17333	-8116 +16322	+16885 +-8240	-19034 +-3801	+13083 +15302	-1025 +-26491	+12200 +17174	+20741 +-6022	-20436 +-8463
64~95	+11476 +-22845	+-23032 +10469	+25465 +7291	+15116 +-22271	+2704 +-27228	+19829 +-19430	+28085 +2155	+22199 +16667	-7077 +-28049	+12885 +26319	+27150 +-11891	+20702 +-8587	+16446 +25407	+4015 +-30250	+22639 +20595	+31072 +-706	+24361 +-29826	+5522 +10385	+16177 +-27219	+30283 +10351	+29721 +12184	+14572 +-28780	-7918 +21422	+26683 +-19612	+32436 +-3486	+22219 +24004
96~127	+-30156 +13320	+21390 +9989	+16998 +-26296	+6126 +32344	+26001 +-30125	+32754 +-2236	+22946 +23407	+1548 +-32762	+20579 +25358	+32166 +-5300	+27390 +-17547	+8681 +31257	+14365 +-29020	+29994 +11927	+30215 +11158	+14953 +-28426	+7901 +31030	+25566 +-17716	+31500 +-4652	+20196 +24481	+1444 +-31617	+22228 +22378	+21396 +-1652	+24293 +19787	+4652 +30871	+17268 +-25910
128~159	+15138 +26364	+6596 +-29608	+24780 +17300	+29874 +3921	+19303 +-22985	+1292 +29900	+21099 +-23092	+26738 +1279	+22670 +19079	+3769 +-26250	+16982 +24046	+28695 +-6171	+25325 +-14849	+8489 +27923	+12628 +-26173	+26952 +10668	+26858 +10401	+12742 +-25808	+8116 +27356	+24582 +-14706	+27932 +-5969	+16305 +23193	+3616 +-28153	+21696 +10177	+20179 +1265	+19698 +-20102
160~191	+26683 +-7015	+-24277 +-12947	+8970 +25906	+11944 +-25069	+25059 +10827	+25689 +9119	+12596 +-24085	+7142 +26140	+22972 +-14258	+26478 +-5174	+15816 +21764	+3227 +-26634	+20452 +17277	+26683 +1275	+18621 +-19056	+642 +26588	+17802 +-19836	+26332 +2529	+20949 +16927	+4389 +-25978	+14466 +21933	+25475 +-6171	+22750 +-12826	+7944 +24865	+11138 +-20540	+24552 +-9659
192~223	+4184 +-25280	+-20280 +15596	+25390 +2451	+15881 +-29069	+678 +25416	+17810 +-18063	+25306 +1061	+19180 +16485	-2743 +-25079	+15936 +20173	+24757 +-4428	+21073 +-13638	+8074 +24313	+12167 +-21855	+23770 +7655	+22566 +10612	+9197 +-23124	+9077 +23121	+22384 +10697	+23615 +-7476	+12115 +21556	+5879 +-23975	+20644 +13482	+24238 +4246	+14768 +-19657	+3642 +24394
224~255	+19147 +-14946	+3756 +23975	+13632 +-20021	+23598 +5288	+20806 +12255	+4794 +-23163	+10859 +21514	+22605 +-4062	+22335 +-9431	+9687 +21959	+7940 +-20628	+21238 +11064	+23030 +6454	+12382 +-20440	+4650 +23339	+19343 +-13641	+23566 +-3418	+14806 +18581	+1805 +-23673	+17557 +15972	+23702 +360	+17001 +-16469	+1139 +23611	+15287 +-17982	+23452 +2626	+18868 +-14302
256~287	+-21819 +8424	+21631 +8827	+-9739 +-21239	+-7389 +22108	+20330 +-11031	+-22475 +-5976	+12288 +19735	+4535 +-22780	+18868 +13485	+22988 +3074	+14615 +-17953	+1636 +23063	+16969 +-15663	+23085 +185	+16687 +15907	+1272 +-23011	+14794 +17638	+22832 +-2704	+18475 +13645	+4129 +-22556	+12427 +19264	+22228 +5522	+19953 +11174	+6882 +-21771	+9869 +20582	+21271 +-8226
288~319	+-4444 +22189	+18401 +-13096	+-22371 +3061	+14200 +17511	+1645 +-22469	+-16570 +15219	+22469 +249	+-15200 +-15550	+1140 +22400	+14482 +-17998	+-22254 +2535	+17923 +-13372	+-3879 +-21995	+-12213 +18660	+21644 +5256	+-19329 +10992	+6548 +21248	+9746 +-19946	+-20732 +7837	+20475 +-9496	+-9073 +-20177	+-7181 +20901	+19527 +-10294	+-21274 +-5872	+11460 +18816	+4538 +-21524

Figure 85. ADSL Loop Test Results(2)



Carrier Type: TSS ○ SNR ○ QLN ○ HLIN ○ HLOG ◉

The HLOG formula: 6-(value/10)(dB). Real values in dB for each carrier over the Upstream passband.(Near-END)

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0~31	251	1023	776	776	776	673	262	138	39	39	35	27	23	23	25	28	34	40	46	53	61	70	78	87	96	105	113	122	130	137	144	152
32~63	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023

The HLOG formula: 6-(value/10)(dB).Real values in dB for each carrier over the Downstream passband.(Far-END)

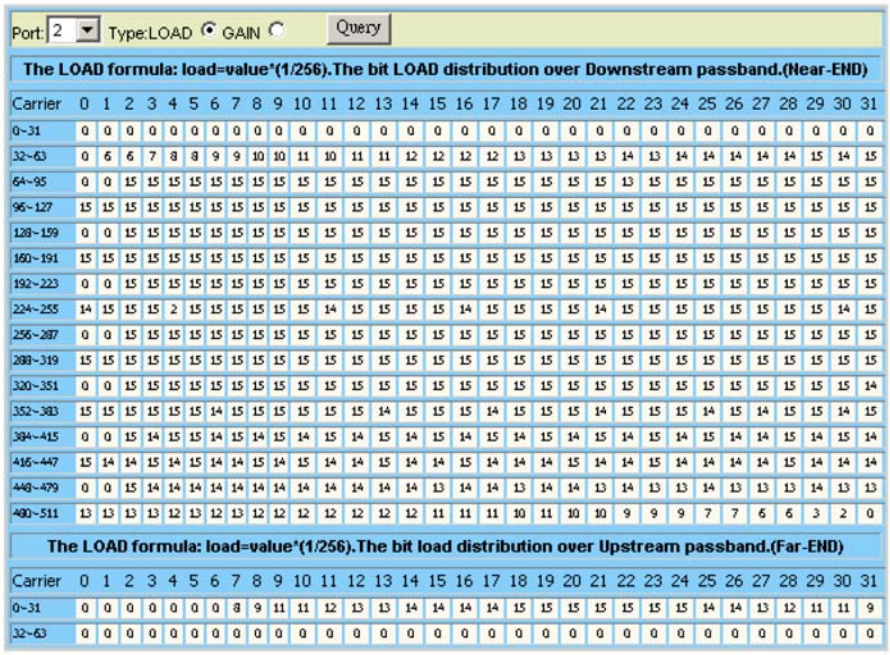
Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0~31	450	450	480	480	520	520	520	520	560	560	560	520	560	560	560	560	560	610	620	520	570	510	490	470	430	410	390	370	340	320	300	280
32~63	260	250	230	210	200	180	170	160	150	140	140	130	120	120	120	110	110	100	100	100	100	90	90	90	90	80	80	80	80	80	80	70
64~95	70	70	70	70	70	60	60	60	60	60	60	60	60	60	60	60	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
96~127	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	60	60	60	60	60	60	60
128~159	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	70
160~191	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
192~223	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	80	80	80	80	80	80	80	80	80	80	80	80	80
224~255	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
256~287	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
288~319	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	90	90	90	90	90	90	90	90	90	90	90
320~351	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
352~383	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
384~415	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	100	100	100	100	100	100	100
416~447	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	110	110	110	110	110	110	110	110	110	110	110	110	110	120
448~479	120	120	120	120	120	120	120	120	120	130	130	130	130	130	130	130	130	140	140	140	140	140	140	150	150	150	150	150	150	160	160	160
480~511	160	170	170	170	170	180	180	180	180	190	190	190	190	200	200	200	210	210	210	220	220	230	230	230	240	240	240	240	250	250	250	250

Figure 86. ADSL Loop Test Results(3)

Carrier Data

This option allows you to view the ADSL line carrier data. From the **ADSL** menu, click on **Data & Inventory** and then **Carrier Data**. The following page displays.

Select the line port (1 ~ 24) and carrier type (LOAD or GAIN). Then click on **Query** button. Note that if the line port is still in loop testing status, you cannot query the carrier data.



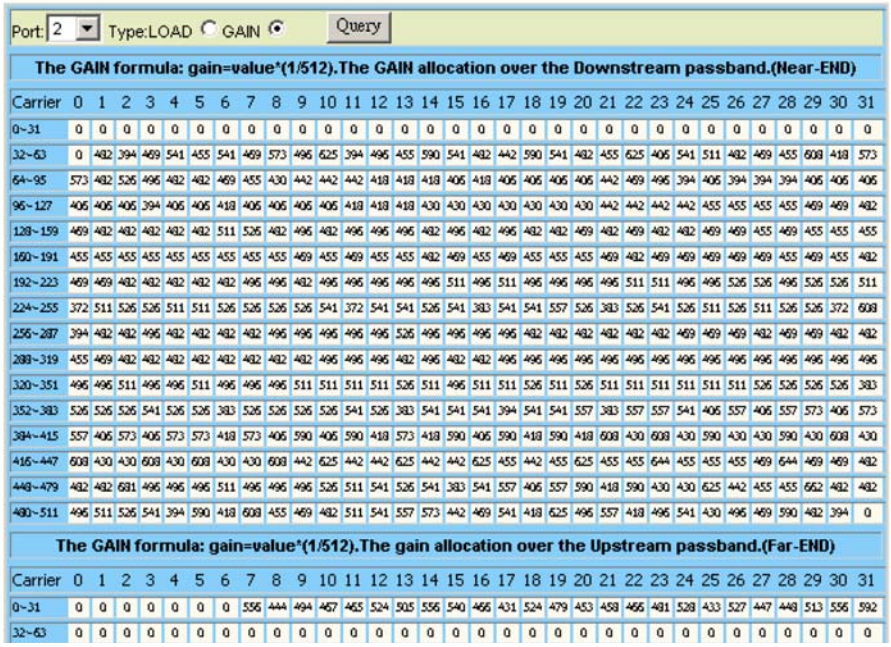
Port: 2 Type:LOAD GAIN Query

The LOAD formula: load=value*(1/256).The bit LOAD distribution over Downstream passband.(Near-END)

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0~31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32~63	0	6	6	7	8	8	9	9	10	10	11	10	11	11	12	12	12	12	13	13	13	13	14	13	14	14	14	14	14	15	14	15
64~95	0	0	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	15	15	15	15	15	15	15	15
96~127	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
128~159	0	0	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
160~191	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
192~223	0	0	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
224~255	14	15	15	15	2	15	15	15	15	15	15	14	15	15	15	15	14	15	15	15	15	14	15	15	15	15	15	15	15	15	14	15
256~287	0	0	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
288~319	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
320~351	0	0	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14
352~383	15	15	15	15	15	15	14	15	15	15	15	15	15	14	15	15	15	14	15	15	15	14	15	15	15	14	15	14	15	15	14	15
384~415	0	0	15	14	15	15	14	15	14	15	14	15	14	15	14	15	14	15	14	15	14	15	14	15	14	15	14	14	15	14	15	14
416~447	15	14	14	15	14	15	14	14	15	14	15	14	14	15	14	14	15	14	14	14	15	14	14	15	14	14	14	14	15	14	14	14
448~479	0	0	15	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	13	14	14	13	14	13	13	14	13	13	13	14	13	13
480~511	13	13	13	13	12	13	12	13	12	12	12	12	12	12	12	11	11	11	10	11	10	10	9	9	9	7	7	6	6	3	2	0

The LOAD formula: load=value*(1/256).The bit load distribution over Upstream passband.(Far-END)

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0~31	0	0	0	0	0	0	0	8	9	11	11	12	13	13	14	14	14	14	15	15	15	15	15	15	15	14	14	13	12	11	11	9
32~63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Port: 2 Type:LOAD GAIN Query

The GAIN formula: gain=value*(1/512).The GAIN allocation over the Downstream passband.(Near-END)

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0~31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32~63	0	482	394	469	541	455	541	469	573	496	625	394	496	455	590	541	482	442	590	541	482	455	625	406	541	511	482	469	455	608	418	573
64~95	573	482	526	496	482	482	469	455	430	442	442	442	418	418	418	406	418	406	406	406	406	442	469	496	394	406	394	394	394	406	406	406
96~127	406	406	406	394	406	406	418	406	406	406	406	418	418	418	430	430	430	430	430	430	430	442	442	442	442	455	455	455	455	469	469	482
128~159	469	482	482	482	482	482	511	526	482	496	482	496	496	496	482	496	482	496	482	482	469	482	469	482	482	469	469	455	469	455	455	455
160~191	455	455	455	455	455	455	455	455	455	469	455	469	455	455	482	469	455	469	455	455	455	455	469	482	469	469	469	469	469	455	469	455	482
192~223	469	469	482	482	482	482	482	496	496	482	496	496	496	496	496	511	496	511	496	496	496	496	511	511	496	496	526	526	496	526	526	511
224~255	372	511	526	526	511	511	526	526	526	526	541	372	541	541	526	541	383	541	541	557	526	383	526	541	526	511	526	511	526	526	372	608
256~287	394	482	482	496	482	482	482	482	496	496	496	496	496	526	496	496	496	496	482	482	482	482	482	482	469	469	469	482	469	469	482	482
288~319	455	469	482	482	482	482	482	482	482	482	496	496	496	482	496	482	482	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496
320~351	496	496	511	496	496	511	496	496	496	511	511	511	511	526	511	496	511	511	526	511	526	511	511	511	511	511	511	526	526	526	526	383
352~383	526	526	526	541	526	526	383	526	526	526	526	541	526	383	541	541	541	394	541	541	557	383	557	557	541	406	557	406	557	573	406	573
384~415	557	406	573	406	573	573	418	573	406	590	406	590	418	573	418	590	406	590	418	590	418	608	430	608	430	590	430	430	590	430	608	430
416~447	608	430	430	608	430	608	430	430	608	442	625	442	442	625	442	442	625	455	442	455	625	455	455	644	455	455	455	469	644	469	469	482
448~479	482	482	681	496	496	496	511	496	496	496	526	511	541	526	541	383	541	557	406	557	590	418	590	430	430	625	442	455	455	662	482	482
480~511	496	511	526	541	394	590	418	608	455	469	482	511	541	557	573	442	469	541	418	625	496	557	418	496	541	430	496	469	590	482	394	0

The GAIN formula: gain=value*(1/512).The gain allocation over the Upstream passband.(Far-END)

Carrier	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0~31	0	0	0	0	0	0	0	556	444	494	457	465	524	505	556	540	466	431	524	479	453	458	466	481	528	433	527	447	448	513	556	592
32~63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

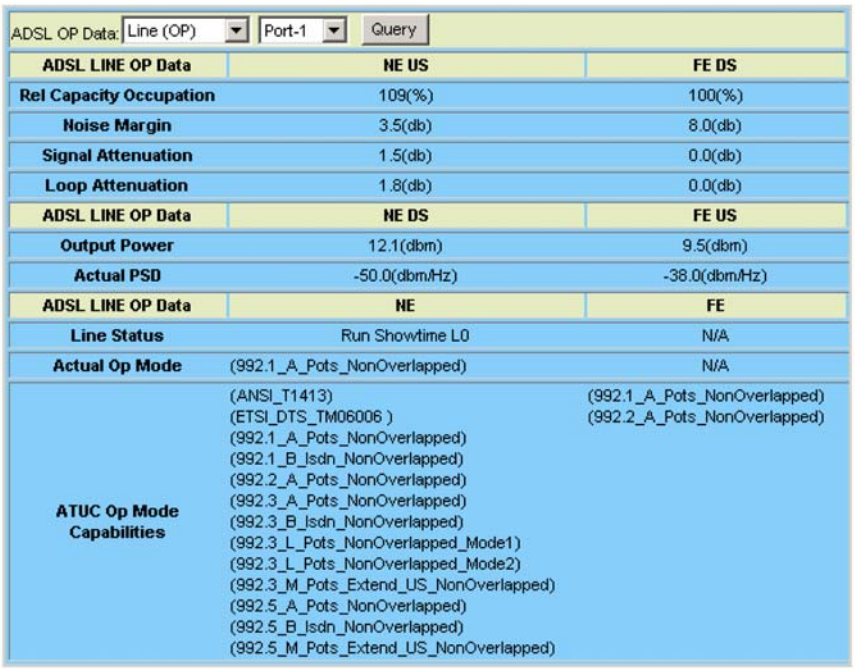
Figure 87. Carrier Data table

OP Data

This option allows you to view the ADSL line/channel operational data and carrier data. From the **ADSL** menu, click on **Data & Inventory**, and then **OP Data**.

Line Operational Data

Click on **ADSL OP Data** drop-down list and select the item **Line (OP)**. Then select the line port (1~24). Click on **Query** button. The following page displays:



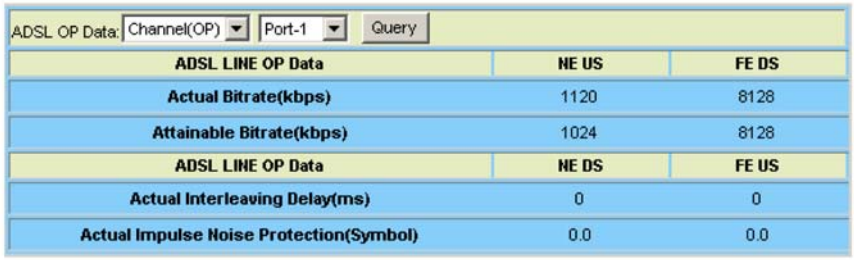
ADSL OP Data: Line (OP) Port-1 Query

ADSL LINE OP Data	NE US	FE DS
Rel Capacity Occupation	109(%)	100(%)
Noise Margin	3.5(db)	8.0(db)
Signal Attenuation	1.5(db)	0.0(db)
Loop Attenuation	1.8(db)	0.0(db)
ADSL LINE OP Data	**NE DS**	**FE US**
Output Power	12.1(dbm)	9.5(dbm)
Actual PSD	-50.0(dbm/Hz)	-38.0(dbm/Hz)
ADSL LINE OP Data	**NE**	**FE**
Line Status	Run Showtime L0	N/A
Actual Op Mode	(992.1_A_Pots_NonOverlapped)	N/A
ATUC Op Mode Capabilities	(ANSI_T1413) (ETSI_DTS_TM06006) (992.1_A_Pots_NonOverlapped) (992.1_B_Isdn_NonOverlapped) (992.2_A_Pots_NonOverlapped) (992.3_A_Pots_NonOverlapped) (992.3_B_Isdn_NonOverlapped) (992.3_L_Pots_NonOverlapped_Mode1) (992.3_L_Pots_NonOverlapped_Mode2) (992.3_M_Pots_Extend_US_NonOverlapped) (992.5_A_Pots_NonOverlapped) (992.5_B_Isdn_NonOverlapped) (992.5_M_Pots_Extend_US_NonOverlapped)	(992.1_A_Pots_NonOverlapped) (992.2_A_Pots_NonOverlapped)

Figure 88. ADSL Line Operational Data page

Channel Operational Data

Click on **ADSL OP Data** drop-down list and select the item **Channel (OP)**. Then select the port (1~24). Click on **Query** button. The following page displays:



ADSL OP Data: Channel(OP) Port-1 Query

ADSL LINE OP Data	NE US	FE DS
Actual Bitrate(kbps)	1120	8128
Attainable Bitrate(kbps)	1024	8128
ADSL LINE OP Data	**NE DS**	**FE US**
Actual Interleaving Delay(ms)	0	0
Actual Impulse Noise Protection(Symbol)	0.0	0.0

Figure 89. ADSL Channel Operational Data page

Line Config & Info

Line Configuration

This option allows you to setup the ADSL line configuration and line information. From the **ADSL** menu, click on **Line Config & Info**. The following page displays:

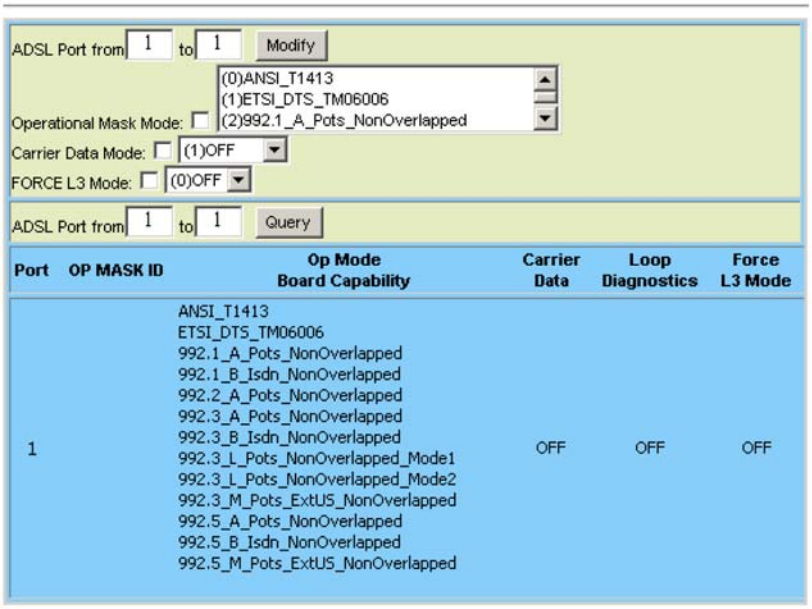


Figure 90. ADSL Line Configuration page

Table 56. ADSL Line Configuration Settings

Label	Description
ADSL Port From...To...	Type in the line port range. Valid circuit number: 1 ~ 24.
Operational Mask Mode	Select the Operational Mode(s) to be masked. Select the modes in the block by using mouse and Shift or Ctrl key. Select the check box and then click on Modify button.
Carrier Data Mode	Click on this drop-down list and select the carrier data mode. Select the check box and then click on Modify button. OFF - Carrier data won't vary during show time. ON - Carrier data collection is active. The carrier data will be refreshed during show time. ON INIT - The ADSL facility is re-initialized and carrier data collection is active (will be refreshed).
FORCE L3 Mode	Click on this drop-down list and select ON to force the ADSL port to enter power management L3 mode (Idle state). Select the check box and then click on Modify button.
Modify	Click on this button to submit modification.
Query	Click on this button to display current line configuration.

Line Information

This option allows you to setup the ADSL line information. From the **ADSL** menu, click on **Line Config & Info** and then **Line Information**. The following page displays:

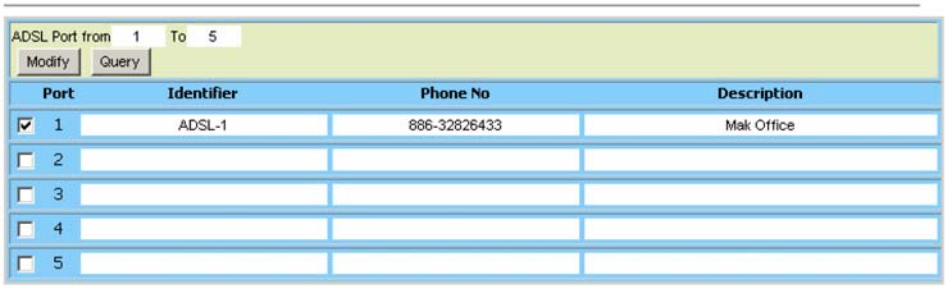


Figure 91. ADSL Line Information page

Table 57. ADSL Line Information Settings

Label	Description
ADSL Port From...To...	Type in the line port range. Valid circuit number: 1 ~ 24.
Modify	Click on this button to submit the modification once you have entered new value for the ADSL line information. Note that to modify an entry, you must select the check box on the leftmost column before you click on Modify.
Query	Once you have typed in the port number range, click on this button to display the ADSL line information of these ports.
Identifier	Type in the ADSL line identifier. Up to 63 characters is allowed.
Phone No	Type in the phone number. Up to 63 characters is allowed.
Description	Type in any comment of this line. Up to 63 characters is allowed

Chapter 5 Traffic Configuration

Chapter contents

ATM Traffic Descriptor 95

ATM Traffic Descriptor

This option allows you to modify the traffic table. From the **Traffic** menu, click on **ATM Traffic Descriptor**. The following page displays:

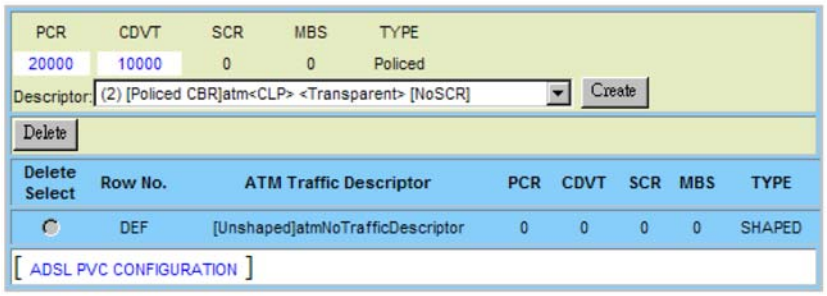


Figure 92. ATM Traffic Descriptor page

Table 58. ATM Traffic Settings

Label	Description
PCR	PCR stands for Peak Cell Rate (cells/second).
CDVT	CDVT stands for Cell Delay Variation Tolerance (microseconds).
SCR	SCR stands for Sustained Cell Rate (cells/second).
MBS	MBS stands for Maximum Burst Size (cells).
TYPE	This field will show Shaped or Policed depending on the descriptor type you select.
See the following page for more table information.	

Table 58. ATM Traffic Settings

Descriptor	Click on this drop-down list and select a descriptor type. After you select a descriptor type, the supported parameters will be displayed in the following columns. Valid descriptor types are: **[Unshaped] atmNoTrafficDescriptor:** This identifies no ATM traffic descriptor type. This traffic descriptor type can be used for best effort traffic. **[Policed CBR] atmCLPTransparentNoScr /** **[Shaped CBR] atmCLPTransparentNoScr:** This traffic descriptor type is for the CLP- transparent model and no Sustained Cell Rate. This traffic descriptor type is applicable to connections following the CBR.1 conformance definition. Connections specifying this traffic descriptor type will be rejected at UNI 3.0 or UNI 3.1 interfaces. For a similar traffic descriptor type that can be accepted at UNI 3.0 and UNI 3.1 interfaces, see "atmNoClpNoScr". **[Policed VBR1] atmNoCLPScrCdvt:** This traffic descriptor type is for no CLP with Sustained Cell Rate and CDVT. This traffic descriptor type is applicable to VBR connections following the UNI 3.0/3.1 conformance definition for PCR CLP=0+1 and SCR CLP=0+1. These VBR connections differ from VBR.1 connections in that the CLR objective applies only to the CLP=0 cell flow. **[Policed VBR2] atmCLPNoTaggingScrCdvt /** **[Shaped UBRNRT] atmCLPNoTaggingScrCdvt:** This traffic descriptor type is for CLP with Sustained Cell Rate and CDVT and no tagging. This traffic descriptor type is applicable to connections following the VBR.2 conformance definition. **[Policed VBR3] atmCLPTaggingScrCdvt:** This traffic descriptor type is for CLP with tagging and Sustained Cell Rate and CDVT. This traffic descriptor type is applicable to connections following the VBR.3 conformance definition. **[Policed UBR1] atmNoCLPNoScrCdvt:** This traffic descriptor type is for no CLP with CDVT and no Sustained Cell Rate. This traffic descriptor type is applicable to CBR connections following the UNI 3.0/3.1 conformance definition for PCR CLP=0+1. These CBR connections differ from CBR.1 connections in that the CLR objective applies only to the CLP=0 cell flow. This traffic descriptor type is also applicable to connections following the UBR.1 conformance definition. **[Policed UBR2] atmNoCLPTaggingNoScr:** This traffic descriptor type is for no CLP with tagging and no Sustained Cell Rate. This traffic descriptor type is applicable to connections following the UBR.2 conformance definition. **[Shaped UBR] atmNoCLPNoScr:** This traffic descriptor type is for no CLP and no Sustained Cell Rate **[Shaped VBR] atmCLPTransparent:** This traffic descriptor type is for the CLP- transparent model with Sustained Cell Rate. This traffic descriptor type is applicable to connections following the VBR.1 conformance definition. Connections specifying this traffic descriptor type will be rejected at UNI 3.0 or UNI 3.1 interfaces. For a similar traffic descriptor type that can be accepted at UNI 3.0 and UNI 3.1 interfaces, see "atmNoClpScr".

Table 58. ATM Traffic Settings

Create	Click on this button to create a new traffic descriptor.
Delete	When you want to delete a traffic descriptor, click on the radio button beside the row number to select the traffic descriptor and then click on the Delete button.

Chapter 6 SNMP Configuration

Chapter contents

SNMP Community....99
SNMP Target....100
SNMP Notify....101

SNMP Community

This option allows you to configure the SNMP community that is the group that Model 3124s and management stations running SNMP belong to. It helps define where information is sent. The community name is used to identify the group and serve as form of authentication. From the **SNMP** menu, click on **SNMP Community**. The following page displays:

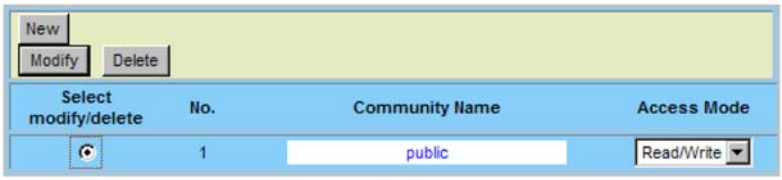


Figure 93. SNMP Community page

Table 59. SNMP Community Options

Label	Description
New	Click on this button to create a new SNMP community. After you click on New, the following page displays. Type in the name of the SNMP community (up to 63 characters; note that community names beginning with a digital number are not allowed) and select the access mode (Read only or Read/Write). Then, click on Apply button.
Access Mode	Select the SNMP community access mode: Read only or Read/Write.
Modify	Click on this button to modify the community name.
Delete	Select an index and then click on this button to delete a community.

SNMP Target

This option allows you to configure the SNMP target to control where the SNMP traps (notifications) are sent. Traps are used to report an alarm or other asynchronous event about a managed Model 3124 system. From the **SNMP** menu, click on **SNMP Target**. The following page displays:

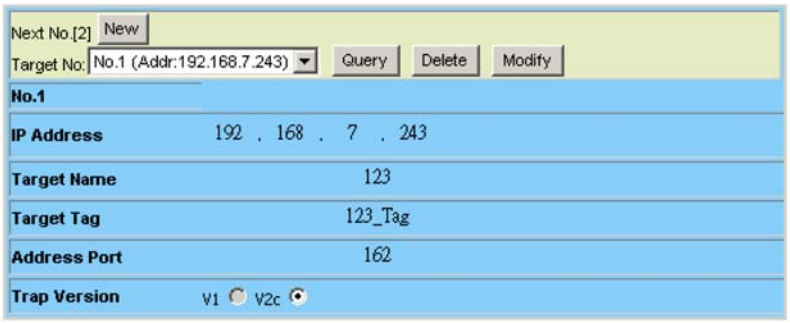
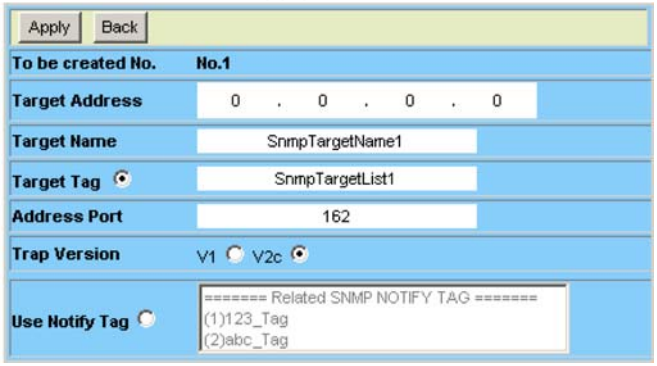


Figure 94. SNMP Target page

Table 60. SNMP Target Options

Label	Description
New	Click on this button to create a new SNMP target. After you click on New, the following page displays. Type in the IP address, name and tag of the SNMP target, and address port (Usually SNMP uses UDP port 161 for general SNMP messages and UDP port 162 for SNMP trap messages), and select Trap version (V1 or V2c). Then, click on Apply button.  The Target Tag can be the same with a Notify Tag; you can select the Notify Tag in the Use Notify Tag field. The Notify Tag is created in the SNMP Notify table. When the Target Tag is the same with a Notify with that Notify Tag is sent to the Target with the same tag.
Target No.	Click on this drop-down list and select the SNMP target number.
Query	Select the target number and then click on this button to retrieve the information.
Delete	Select the target number and then click on this button to delete a target.
Modify	Select the target number and then click on this button to modify the target setting.

SNMP Notify

This option allows you to setup the SNMP Notification (In SNMPv1, asynchronous event reports are called traps while they are called notifications in later versions of SNMP). From the **SNMP** menu, click on **SNMP Notify.** The following page displays:

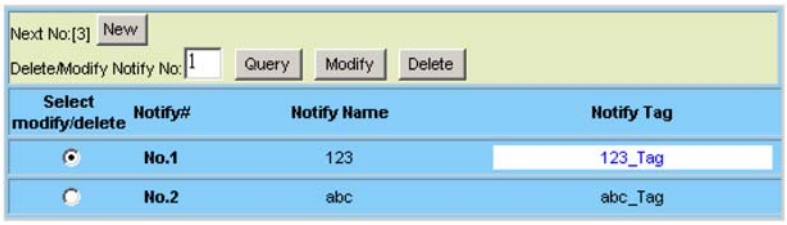
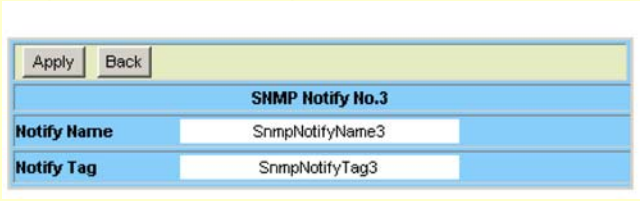


Figure 95. SNMP Notify page

Table 61. SNMP Notify Options

Label	Description
Notify No.	This field shows the Notify number you select.
New	Click on this button to create a new SNMP Notify. After you click on New, the following page displays. Type in the name and tag of the SNMP Notify and click on Apply button. By specifying the Notify tag, you can bind the Notify name to the SNMP target address table. When the Notify tag is the same with the Target Tag in a target table, the Notify is sent to the corresponding Target address. 
Delete	Select a row and then click on this button to delete a Notify.
Modify	Select the row and type in new notify tag and then click on this button to submit the modification.

Chapter 7 Maintenance

Chapter contents

SYS Log Server 103
Database 104
(A) Import File (Write Download Config To Flash) 105
(B) Import File (Load Remote Config to Running Config) 106
(C) Export File (Put Running Config to Remote TFTP Server) 107
(D) Save Running Config to Flash (System Config) 108
(E) Reload Flash to Running Config 109
(F) Restore Factory Default 110
(G) Flash Boot Point Configuration Select 111
Firmware Update 112
ATM Loopbacks 114
Fault Management 115
Alarm/Event 115
Current Alarm 115
History Alarm 115
Event Log 116
Alarm Profile 117
Hardware Temperature 118
Performance Monitoring 119
System Utilization 119
Ethernet Statistics 119
GBE Interface 119
ADSL Line PVC 120
ATM Statistics 120
RMON 121
ETH Statistics 121
History Control 123
ETH History 124
Alarm 126
Event 128
LOG 128
ADSL Day/Interval 129

SYS Log Server

This option allows you to configure the IP address of the SYS Log server which listens for incoming Syslog messages. From the **Maintenance** menu, click on **SYS Log Server**. The following page displays:

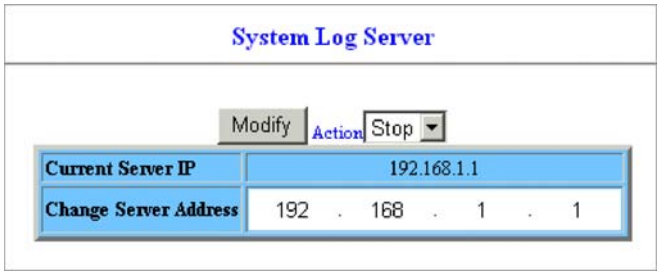


Figure 96. System Log Server page

Table 62. SYS Log Server Settings

Label	Description
Current Server IP	This field shows the IP address of current Sys Log server.
Change Server Address	Type in the new IP address of Sys Log server. The server must be a remote host.
Modify	To change SYS Log server address, click on this button once you have type in a new server IP address.
Action	Click on this drop-down list and select Start to start sending the Syslog messages to the server or Stop to stop sending the Syslog messages to the server.

Database

This option allows you to import/export the configuration data. From the **Maintenance** menu, click on **Database**. The following page displays. Select the database configuration action you want to perform.

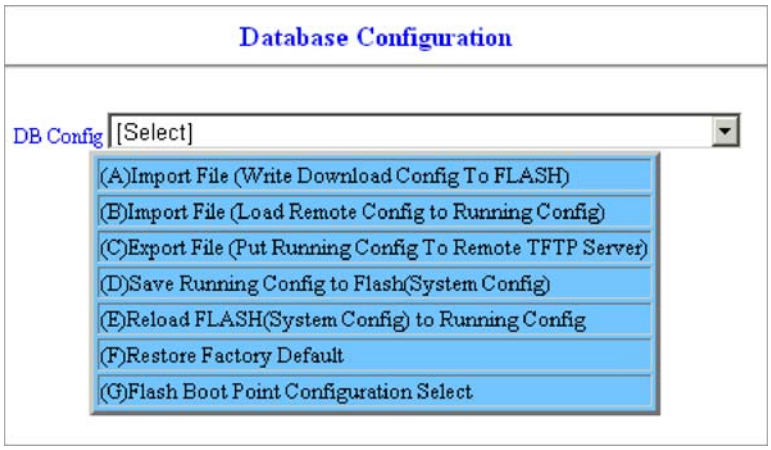


Figure 97. Database Configuration menu

Database Configuration Concept.

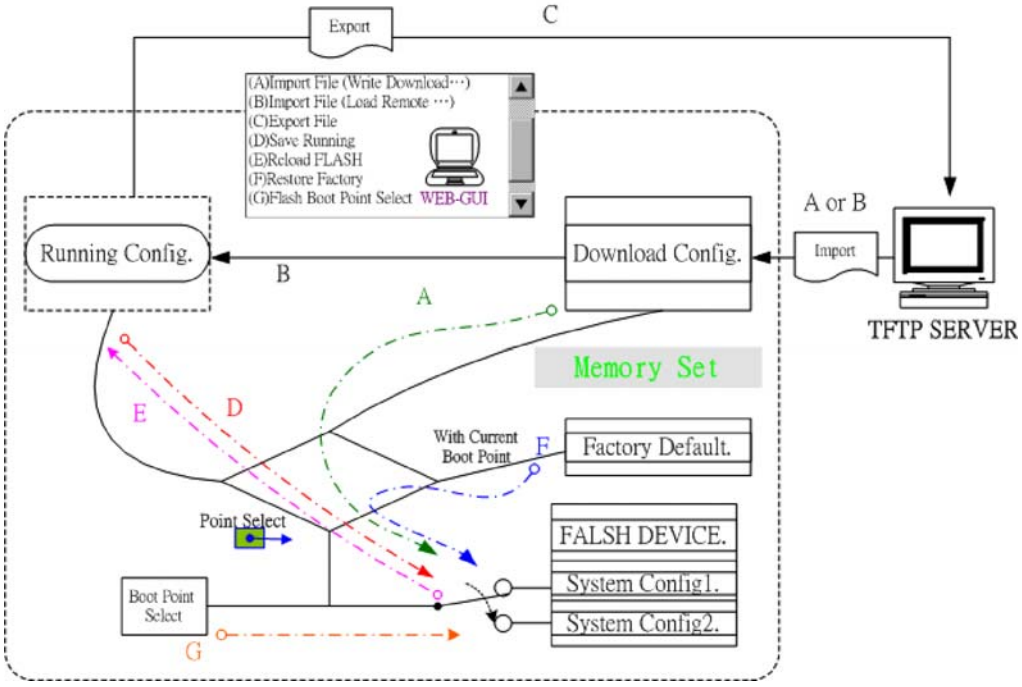


Figure 98. Database Configuration concept

(A) Import File (Write Download Config To Flash)

Type in the TFTP Server IP address and the name of the file you want to download. Then click on **Get File** button.

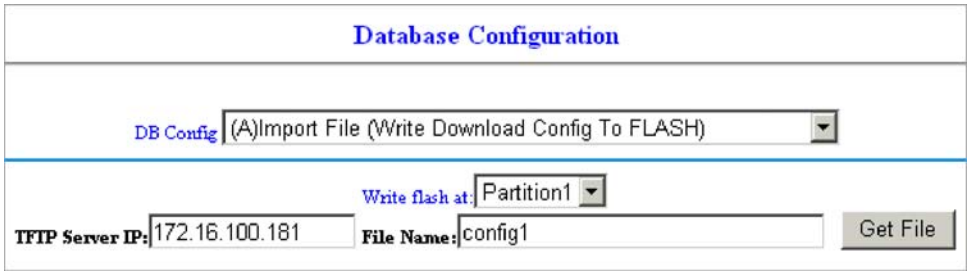


Figure 99. Database Configuration - Import File - Get File

Write downloaded Config to Flash in progress:

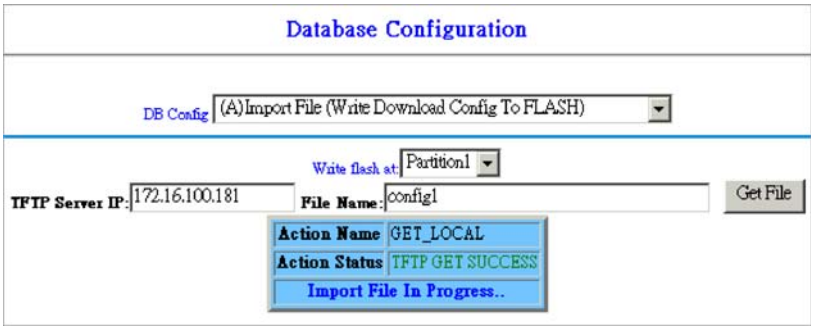


Figure 100. Database Configuration - Import File - Write to Flash

Write to memory successfully:

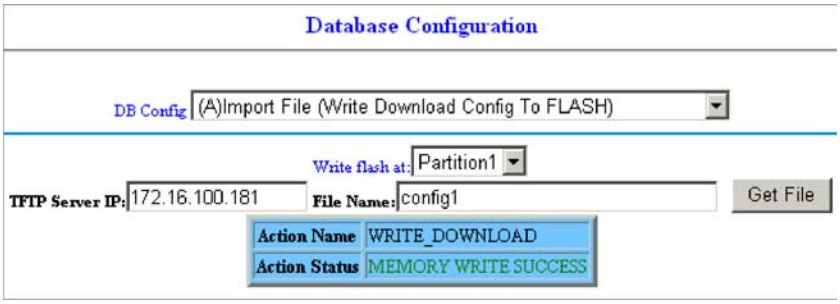


Figure 101. Database Configuration - Import File - Write Successful

Fail to Get File:

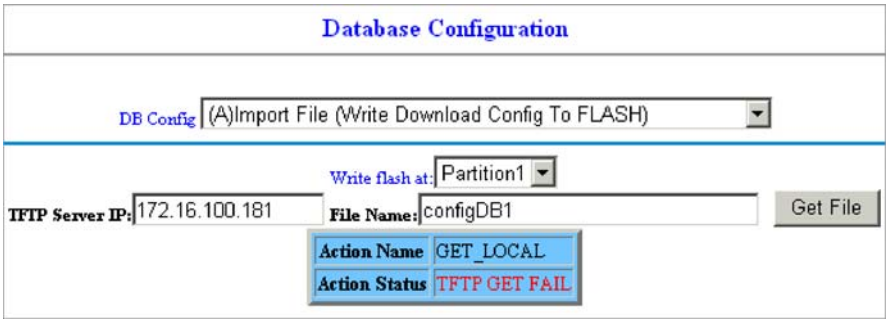


Figure 102. Database Configuration - Import File - Fail to Get File

(B) Import File (Load Remote Config to Running Config)

Type in the TFTP Server IP address and the name of the file you want to download. Then click on **Get File** button.

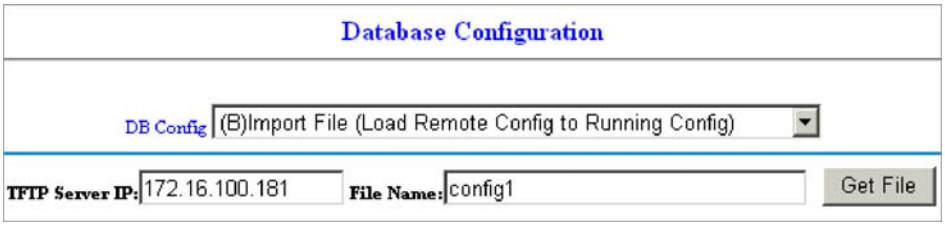


Figure 103. Database Configuration - Import File (Remote Config) - Get File

Write to Running Config successfully:

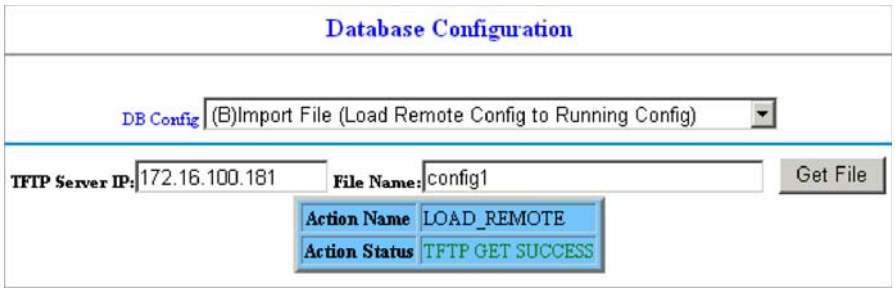


Figure 104. Database Configuration - Import File (Remote Config) - Write Successful

Fail to Get File:

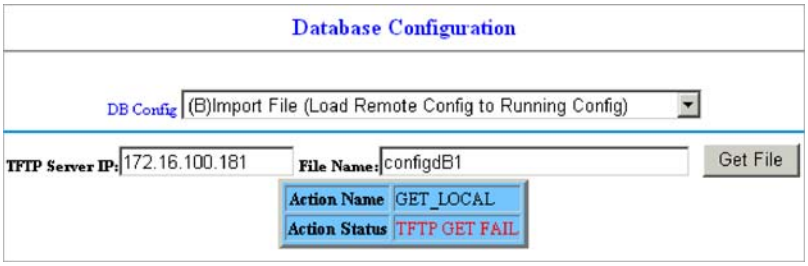


Figure 105. Database Configuration - Import File (Remote Config) - Write Failed

(C) Export File (Put Running Config to Remote TFTP Server)

Type in the TFTP Server IP address and the name of the file you want to export. Then click on **Put File** button.

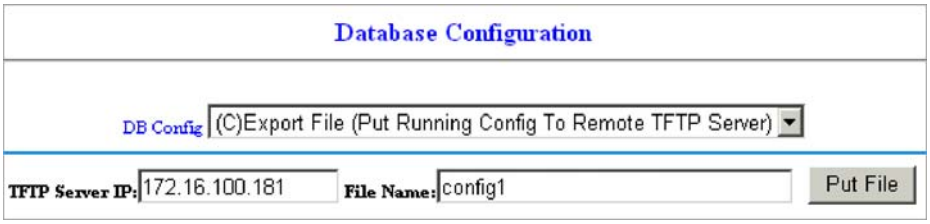


Figure 106. Database Configuration - Export File - Put File

TFTP put file successfully:

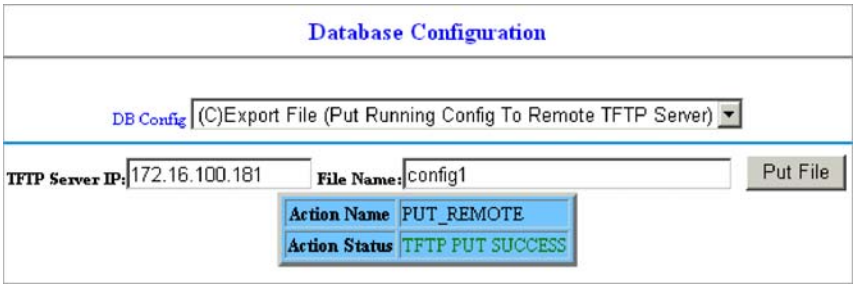


Figure 107. Database Configuration - Export File - Put File Successful

TFTP put file fail:

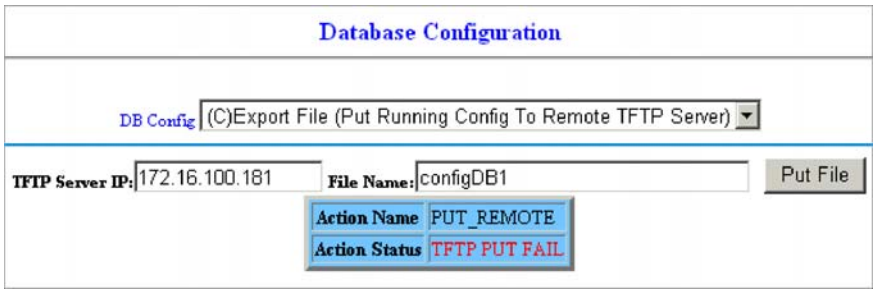


Figure 108. Database Configuration - Export File - Put File Failed

(D) Save Running Config to Flash (System Config)

Click on the drop-down list and select partition, and then click on **Write_Running** button to write running configuration to Flash.

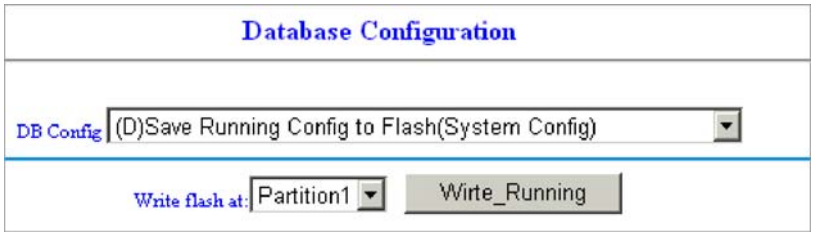


Figure 109. Database Configuration - Save Running Config to Flash

Write running config to Flash successfully:

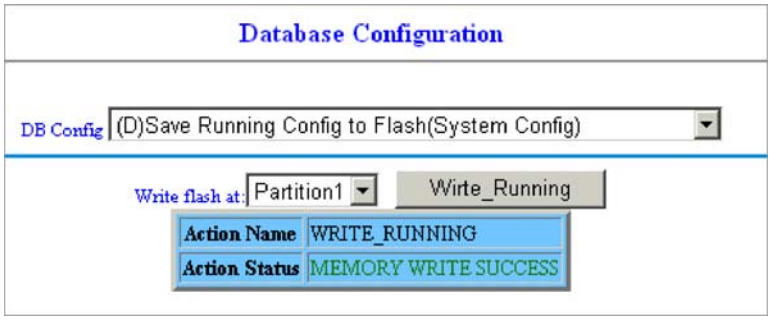


Figure 110. Database Configuration - Save Running Config to Flash Successful

(E) Reload Flash to Running Config

Click on the drop-down list and select partition, and then click on **LOAD_FLASH** button to load configuration from Flash to Running Config.

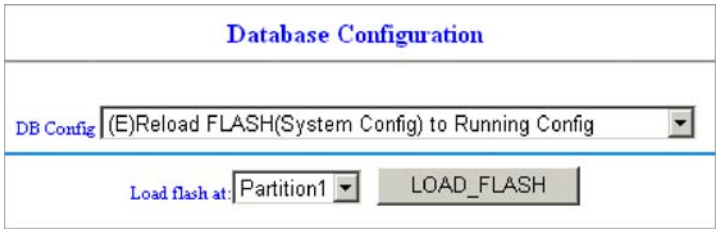


Figure 111. Database Configuration - Reload Flash

Load configuration from Flash to Running Config successfully:

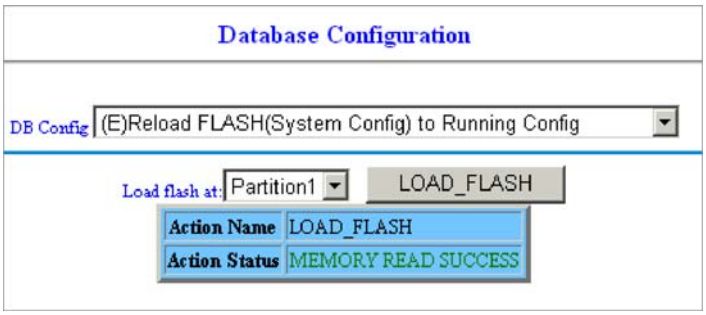


Figure 112. Database Configuration - Reload Flash Successful

(F) Restore Factory Default

Except out-band IP address and user account, all other configuration will be restored to factory default.

Click on **Factory_Default** button to restore factory default configuration.

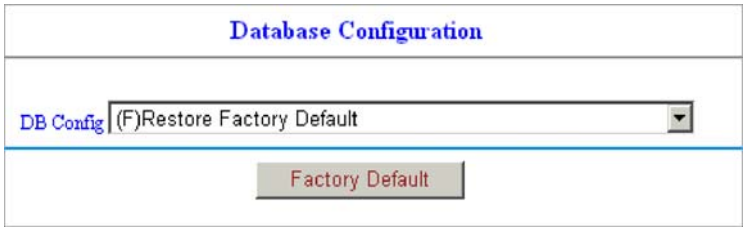


Figure 113. Database Configuration - Restore Factory Default

After loading default configuration to Flash successfully, you must click on **RESTART** button to restart the system so that the configuration can take effect:

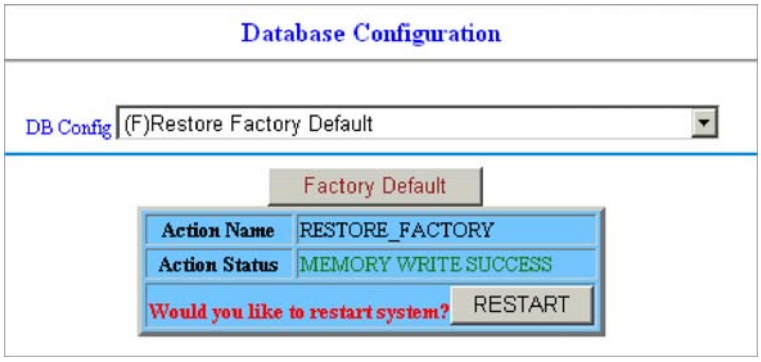


Figure 114. Database Configuration - Restore Factory Default Successful

(G) Flash Boot Point Configuration Select

Click on the **Boot Config** drop-down list and select the partition (Partition1 or Partition2) as the boot point. Click on **Apply** button and then restart the system. The system will restart and load the configuration in the partition you select into the running configuration.

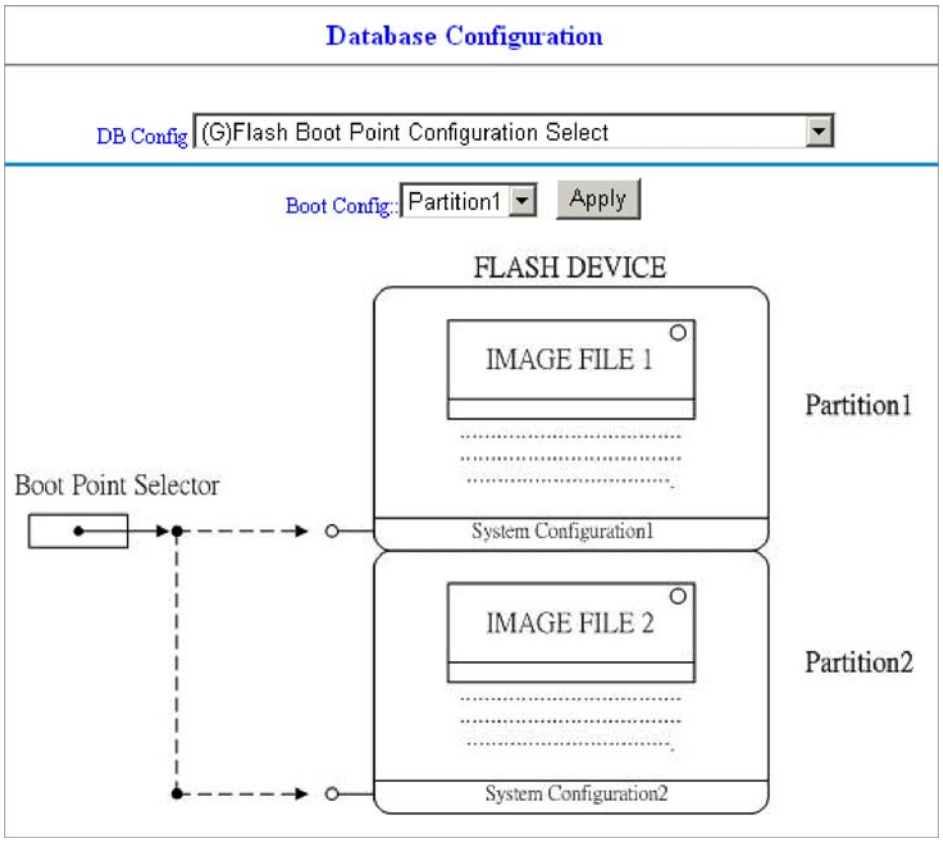


Figure 115. Database Configuration - Boot Configuration

Firmware Update

This option allows you to ftp get the firmware from a server and write to flash for updating the system firmware. From the **Maintenance** menu, click on **Firmware Update**. The following page displays:

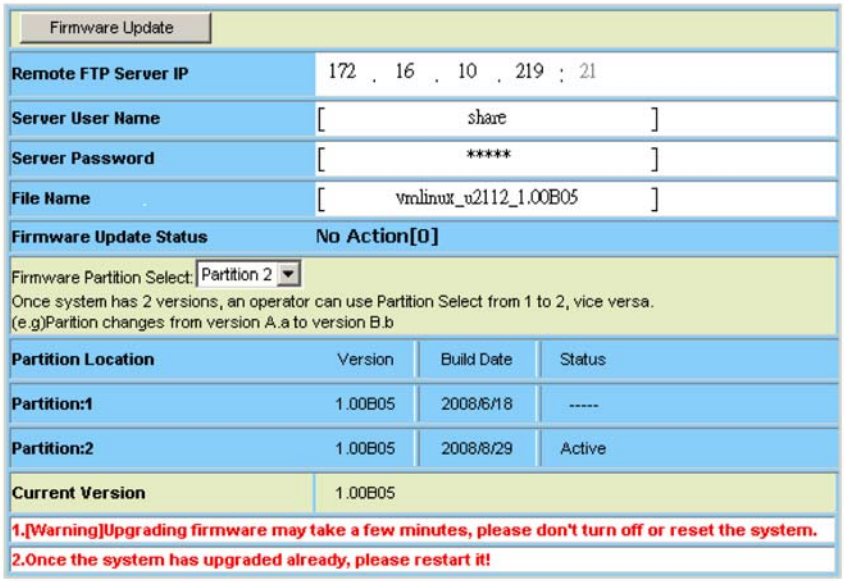


Figure 116. Firmware Update page

Table 63. Firmware Update Options

Label	Description
Firmware Update	Once you have typed in the parameter values, click on this button to start the firmware update.
Remote FTP Server IP	Type in the IP address of the FTP server.
Server User Name	Type in the ftp user name.
Server Password	Type in the ftp password.
File Name	Type in the firmware filename.
Firmware Update Status	This field shows current status of firmware update process.
Partition Select	Select firmware memory partition (Partition 1 or 2). If you change to the non-active partition, system will restart immediately.
Partition Information	This section displays the partition information including firmware version, updating date, and status (active or not). When you update the firmware, new firmware will be updated to the non-active partition.

FTP Get successfully: The following message displays while getting file from FTP server.

Firmware Write in progress: The Flash Write process may take a few minutes; you must not turn off or reset the system during the process.

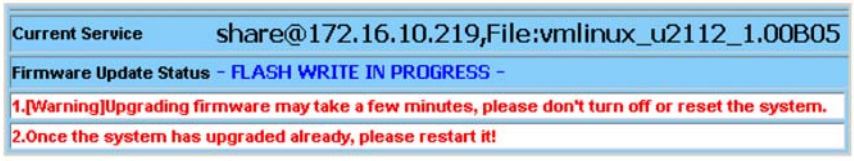


Figure 117. Firmware Update - Flash Write In Progress

Write image to FLASH successfully: When the Flash Write process has completed successfully, the Firmware Update Status shows "Firmware has upgraded already". You can now restart the system.

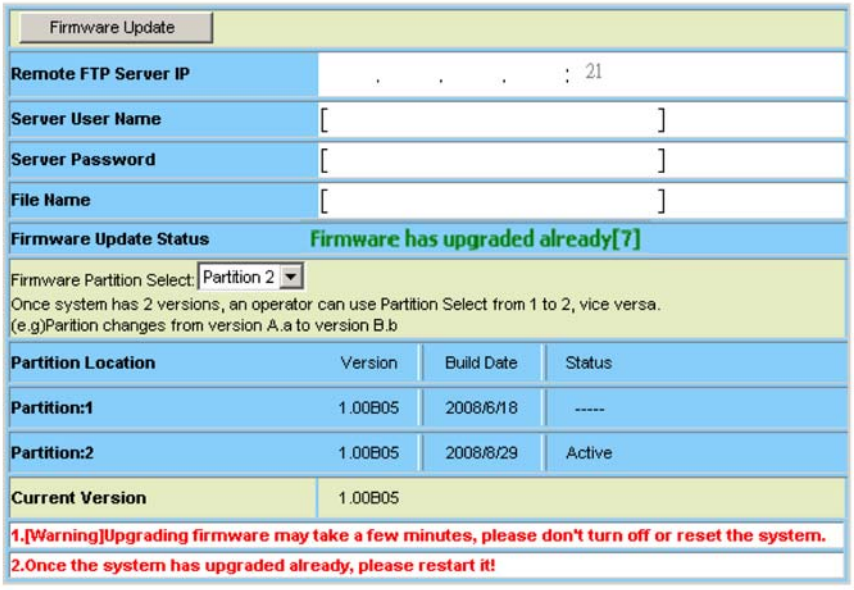


Figure 118. Firmware Update - Flash Write Successful

ATM Loopbacks

This option allows you to modify the ATM F4/F5 entries or send the diagnostic entry. From the **Maintenance** menu, click on **ATM Loopbacks**. The following page displays:

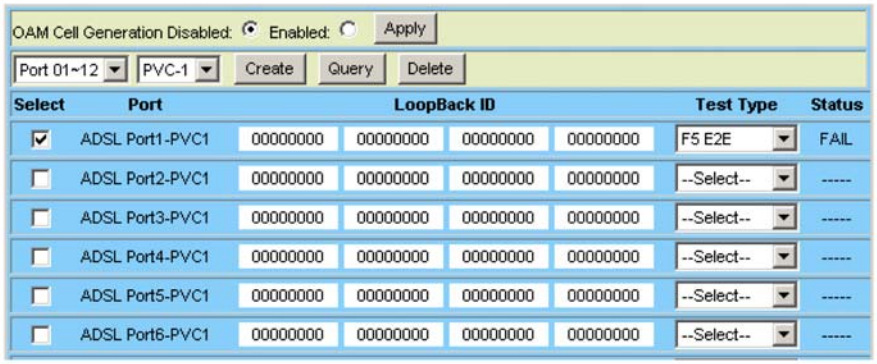


Figure 119. ATM Loopback page

Table 64. ATM Loopback Settings

Label	Description
OAM Cell Generation	Click on the radio button to Disable/Enable OAM Cell Generation. Then click on **Apply** button to submit the setting.
Port List	Click on the drop-down lists to select port range (1 ~ 24) and PVC (1 ~ 8).
Create	Click on this button to create a loopback setting. *Note:* Make sure the interface has been setup and the service state of the circuit is turned on.
Query	Click on this button to query the loopback status.
Delete	Click on this button to delete a loopback entry.
Select	Click on the check box to select the PVC you want to create or delete the loopback setting for.
Port	This field shows the port and PVC number.
LoopBack ID	Type in a loopback ID (32 digit).
Test Type	Select the loopback type: F5 E2E or F5 Segment.
Status	This field shows current loopback testing status. Possible values are: Fail, Success, In Progress, or —.

Fault Management

Alarm/Event

This option allows you to query current alarm, history alarm, and event log. From the **Maintenance** menu, click on **Fault Management** and then **Alarm/Event**. The Current Alarm page displays. Click on the **Alarm/Event Select** drop-down list and select Current Alarm, History Alarm, or Event Log to view.

Current Alarm

Type in the range of rows (1 ~ 1024) and then click on the **Query** button.

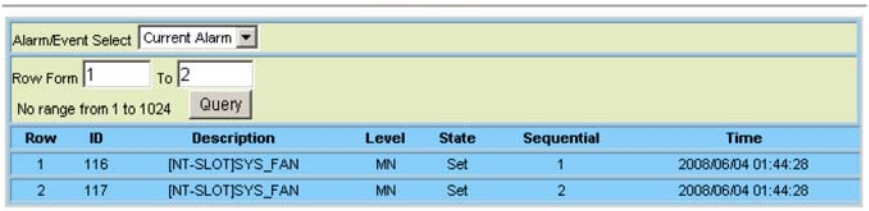


Figure 120. Current Alarm page

Table 65. Current Alarm Table Description

Label	Description
Query	Click on this button to get the most recent data.
Row	This field shows the row number (1~256).
ID	This field shows the alarm ID.
Description	This field shows the description for the alarm.
Level	This field shows the alarm level. Valid values are: MJ: major alarm. MN: minor alarm.
State	This field shows the alarm state: Set or Clear.
Sequential	Sequential number.
Time	Alarm occurring date and time.

History Alarm

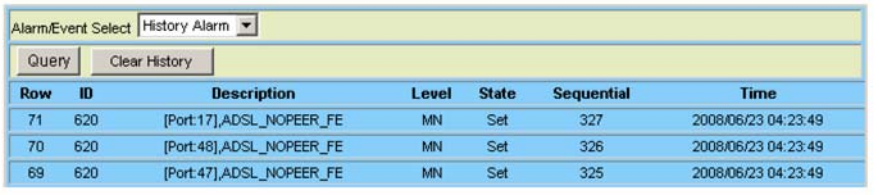


Figure 121. History Alarm page

Table 66. History Alarm Table Description

Label	Description
Query	Click on this button to query history alarms.
Clear History	Click on this button to clear the alarm history table.
Row	This field shows the row number.
ID	This field shows the alarm ID.
Description	This field shows the description for the alarm.
Level	This field shows the alarm level. Valid values are: MJ: major alarm. MN: minor alarm.
State	This field shows the alarm state: Set or Clear.
Sequential	Sequential number.
Time	Alarm occurring date and time.

Event Log

Type in the range of rows and then click on the **Query** button.

Figure 122. Event Log page

Table 67. Event Log Table Description

Label	Description
Query	Click on this button to query the most recent event log.
Clear Event	Click on this button to clear the event log.
Row	This field shows the row number.
ID	This field shows the event ID number.
Description	This field shows the description for the event.
Sequential	Sequential number.
Time	Event occurring date and time.

Alarm Profile

This option allows you to view and update the alarm profiles. From the **Maintenance** menu, click on **Fault Management** and then **Alarm profile**. The Alarm Profile page displays. Click on the **Select Page** drop-down list and select a page to display.

To modify an alarm profile, click on the radio button beside the alarm ID, select the Level (Major/Minor), Mask/Unmask, and then click on the **Modify** button. You can also select the ALL ID checkbox to modify all alarm types at a time.

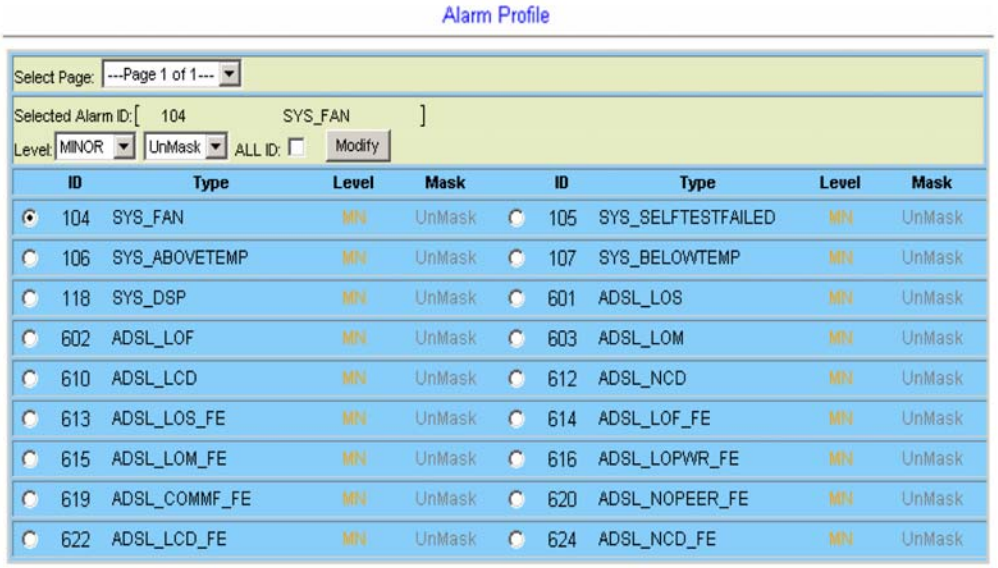


Figure 123. Alarm Profile page

Hardware Temperature

This page allows you to:

- View current system temperature
- Set several temperature and time thresholds (see description in table 68)

From the **Maintenance** menu, click on **Fault Management** and then **Hardware Temp**. The following page displays:

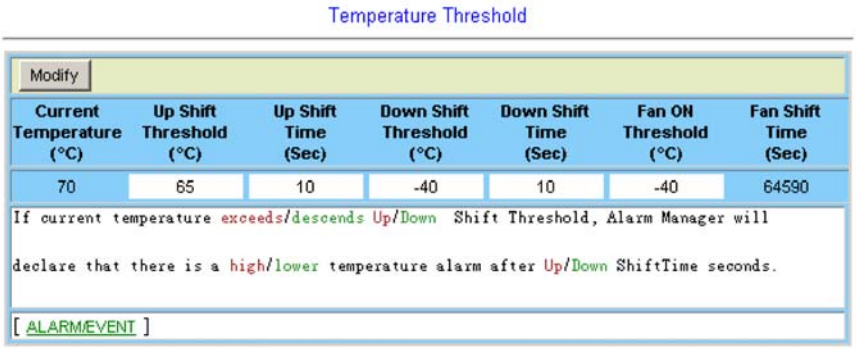


Figure 124. Hardware Temperature page

Table 68. Hardware Temperature Settings

Label	Description
Modify	Click on this button to submit the update once you have entered all the new threshold values.
Current Temperature °C	This field shows the current system temperature.
Up Shift Threshold °C	The system will produce notification (alarm) when the monitored system temperature is higher than Up Shift TH (-55~85 °C) for over Up Shift Time (1~255 sec).
Up Shift Time (Sec)	Refer to the description for Up Shift TH.
Down Shift Threshold °C	The system will produce notification (alarm) when the monitored system temperature is lower than Down Shift TH (-55~85 °C) for over Down Shift Time (1~255 sec).
Down Shift Time (Sec)	Refer to the description for Down Shift TH.
Fan ON Threshold °C	FAN Enable temperature threshold (-40~15 °C). When the system temperature is higher than the threshold, the fan will be turned on automatically.
Fan Shift Time (Sec)	This field shows the elapsed time since the FAN was turned on.

Performance Monitoring

System Utilization

This option allows you to monitor the memory utilization and network processor utilization. From the **Maintenance** menu, click on **Performance Monitoring** and then **System Utilization**. The following page displays.

Current Memory Utilization	
(0)Parameter Bus(ZBT)	21.0%
(1)Packet Bus(SDRAM)	0.0%
(2)Host Bus(SDRAM)	0.0%
Current CPU Utilization	
(3)WinGine1	41.6%
(4)WinGine2	8.3%
(5)Average Loading	25.0%
(6)Idle	75.0%

Figure 125. System Utilization

Ethernet Statistics

This option allows you to view the Gigabit Ethernet counter values for the trunk or line interface. From the **Maintenance** menu, click on **Performance Monitoring** and then **Ethernet Statistics**. Click on the leftmost drop-down list to select interface (giga port or DSL line port); if line interface is selected, you must further click on the middle and rightmost drop-down list to select the line port number and PVC number. At last, click on **Query** to get data of that interface.

GBE Interface

GIGA Port | XDSL Port-1 | PVC-1 | Query

Statistics Name	Giga Port 1
MTU Size	1536
Queue LEN	0
Last Change	0
Specification	D
Description	Giga Ethernet
Input Bytes	0
Input Broadcast Packets	101827
Input Discard Packets	911
Input Multicast Packets	1472
Input Unicast Packets	4575
Input Not Unicast Packets	103299
Input Error Packets	0
Input Unknown Protocol Packets	0
Output Bytes	0
Output Broadcast Packets	11
Output Discard Packets	0
Output Multicast Packets	0
Output Unicast Packets	4549
Output Not Unicast Packets	11
Output Error Packets	0

Figure 126. Ethernet Statistics - GBE Interface

ADSL Line PVC

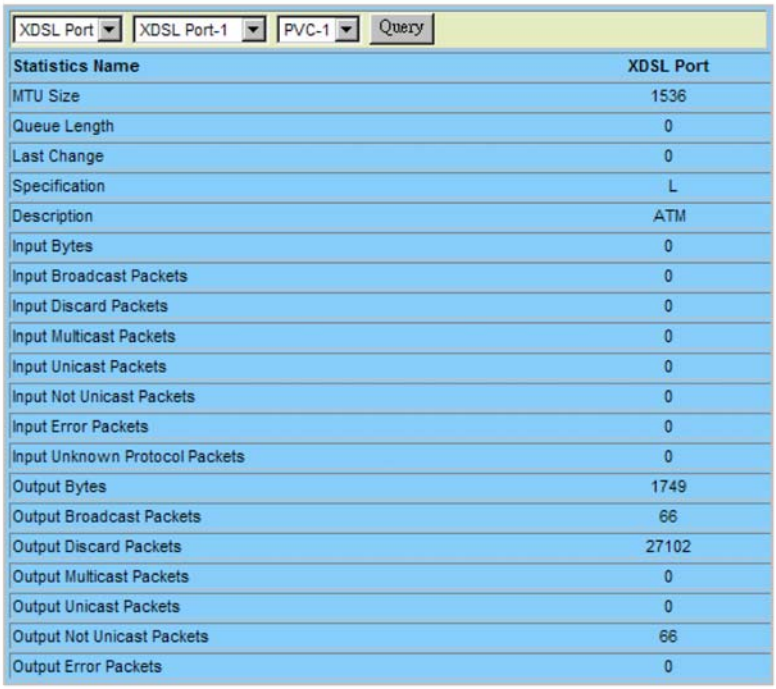


Figure 127. Ethernet Statistics - ADSL Line PVC

ATM Statistics

This option allows you to query the ATM Statistics. From the **Performance Monitoring** menu, click on **ATM Statistics**. The following page displays:

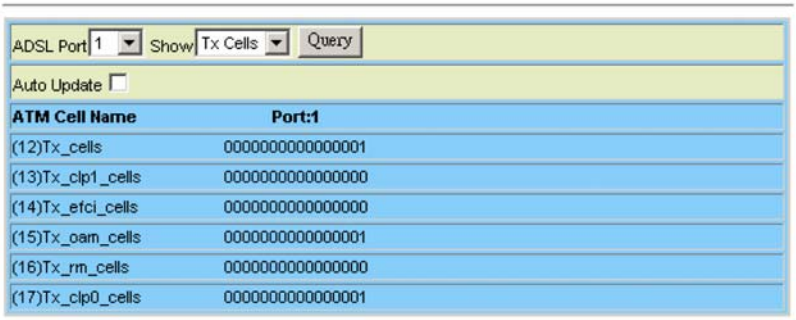


Figure 128. ATM Statistics page

Table 69. ATM Statistics

Label	Description
ADSL Port	Click on this button to select the line port.
Auto Update	Select this check box to auto update the displayed statistics.
Show	Click on this drop-down list to select Tx, Rx, or All (Tx & Rx) data.
Query	Click on this button to query current statistics.

RMON

This option allows you to configure and query the RMON Statistics. The Model 3124 supports performance statistics defined in RMON MIB groups 1 (Ethernet statistics), 2 (history control), 3 (alarm), and 9 (event) per RFC 2819 for all network uplink ports. From the **Performance Monitoring** menu, click on **RMON**.The following page displays:. Select statistics type in the drop-down list.

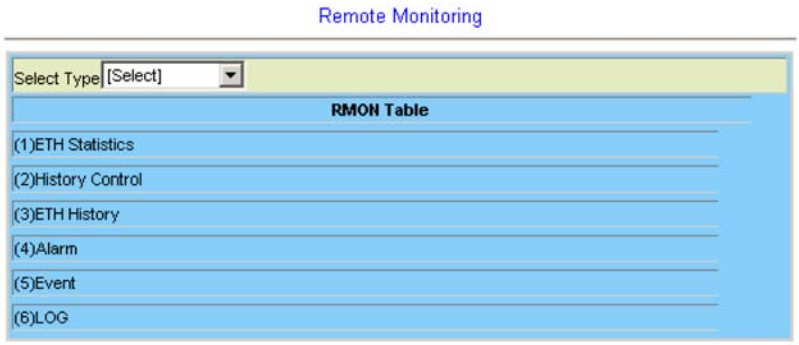


Figure 129. Remote Monitoring (RMON) page

ETH Statistics

This option is for displaying the Ethernet interface RMON data. Click on the Data Source drop-down list and select GBE1 or GBE2. Type in an owner name and then click on **New** button to create a new ETH statistics entry. To modify an entry, click on the index to select the entry, type in new value, and then click on **Modify**. To delete an entry, click on the index to select the entry and then click on **Delete**. The following parameters are monitored in this table:

Table 70. RMON ETH Statistics

Variable	Description
DropEvents	Monitoring rx dropped packets
Octets	Monitoring rx bytes packets
Pkts	Monitoring rx packets
BroadcastPkts	Monitoring rx broadcast packets
MulticastPkts	Monitoring rx multicast packets
CRCAlignErrors	Monitoring rx error aligment packets
UndersizePkts	Monitoring rx undersize packets
OversizePkts	Monitoring rx oversize packets
Fragments	Monitoring rx fragments packets
Jabbers	Monitoring rx jabber packets
Collisions	Monitoring tx single collision packets
Pkts64Octets	Monitoring tx 64 octets
Pkts65to127Octets	Monitoring tx 65 to 127 octets
Pkts128to255Octets	Monitoring tx 128 to 255 octets
Pkts256to511Octets	Monitoring tx 256 to 511 octets
Pkts512to1023Octets	Monitoring tx 512 to 1023 octets
Pkts1024to1518Octets	Monitoring tx 1024 to 1518 octets

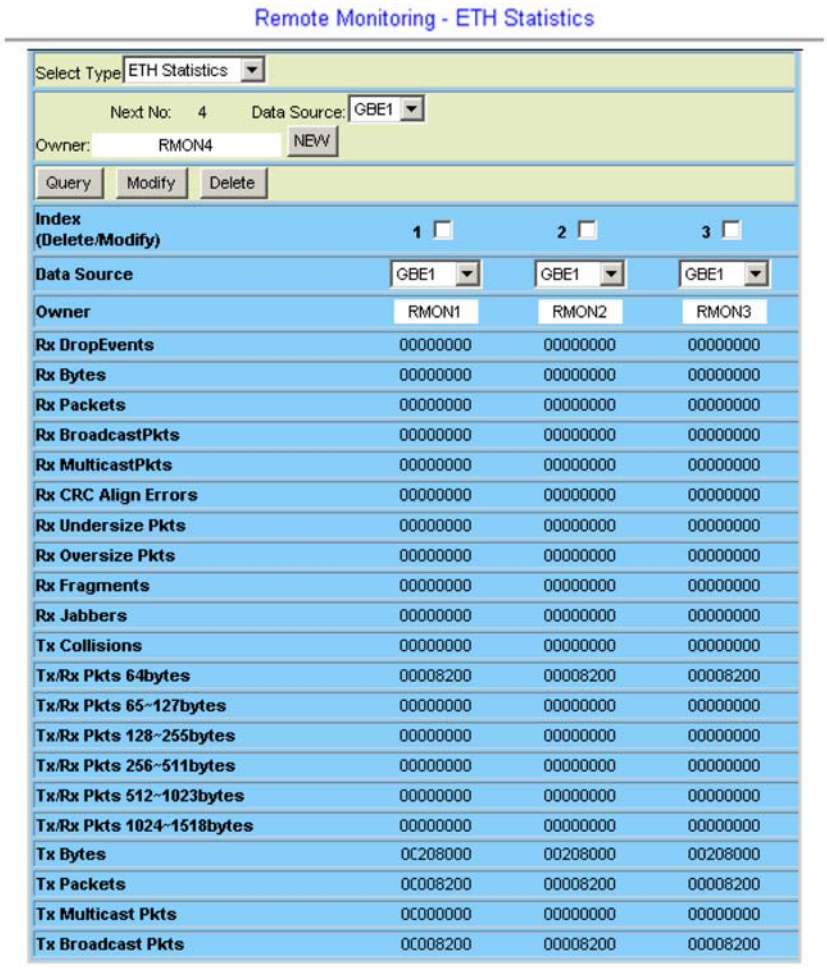


Figure 130. Remote Monitoring - ETH Statistics

History Control

This table is for controlling the ETH History table (see next section). History Control 1 is for controlling ETH History table 1; History Control 2 is for controlling ETH History table 2; etc. Type in the Requested value and Interval (sec) and then click on **New** to create a History Control entry. Up to 10 History Control entries can be created. To modify an entry, click on the index to select the entry, type in new value, and then click on **Modify**. To delete an entry, click on the index to select the entry and then click on **Delete.**

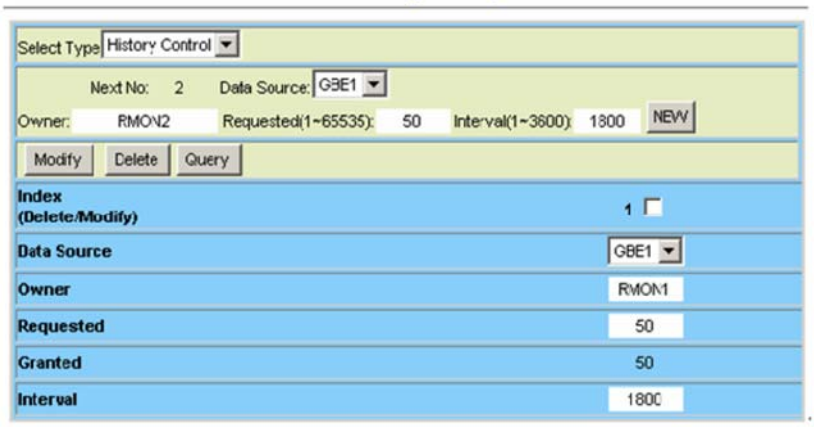


Figure 131. Remote Monitoring - History Control

Table 71. RMON History Control

Label	Description
Data Source	Data source identifies the source of the data for which historical data was collected and placed in a table on behalf of this HistoryControl entry. Here the source is GBE1 interface.
Owner	An owner is the entity that configured this entry and is therefore using the resources assigned to it.
Requested	Requested value is the requested number of intervals over which data is to be saved in the part of the media-specific table associated with this HistoryControl entry.
Granted	The number of sampling intervals over which data shall be saved in the part of the media-specific table associated with this HistoryControl entry.
Interval	The interval in seconds over which the data is sampled for each bucket in the part of the media-specific table associated with this HistoryControl entry. The value range is 1 to 3600 (sec).

ETH History

This option is for displaying Ethernet interface RMON history data. Before a history table is available, you have to create a History Control entry in advance (see previous section). To query the History table, click on the History Index drop-down list and select a history table and then click on **Query**.

Figure 132. Remote Monitoring - ETH History

Table 72. RMON Eth History

Label	Description
HistIndex	This field shows the History Table index. The history identified by this index is the same history as identified by the same value of History Control index.
SampleIndex	The Sample index uniquely identifies the particular Sample among all samples associated with the same History Control entry.
IntervalStart	The value of System Up Time[a] at the start of the interval over which this sample was measured.

a. System Up Time is the time since the network management portion of the system was last re-initialized.

Table 73. RMON ETH History Variables

Variable	Description
Rx DropEvents	Monitoring rx dropped packets
Rx Bytes	Monitoring rx bytes packets
Rx Packets	Monitoring rx packets
Rx Broadcast Pkts	Monitoring rx broadcast packets
Rx Multicast Pkts	Monitoring rx multicast packets
Rx CRC Align Errors	Monitoring rx error aligment packets
Rx Undersize Pkts	Monitoring rx undersize packets
Rx Oversize Pkts	Monitoring rx oversize packets
Rx Fragments	Monitoring rx fragments packets
Rx Jabbers	Monitoring rx jabber packets
Tx Collisions	Monitoring tx single collision packets
Tx Bytes	Monitoring tx bytes
Tx Packets	Monitoring tx packets
Tx Multicast	Monitoring tx multicast
Tx Broadcast	Monitoring tx broadcast
Utilization	Monitoring tx utilization

Alarm

This option allows you to configure the RMON alarm setting. This table controls the conditions on which alarms occur. Click on **New** to create an entry. To modify an entry, click on the index to select the entry, type in new value, and then click on **Modify**. To delete an entry, click on the index to select the entry and then click on **Delete**.

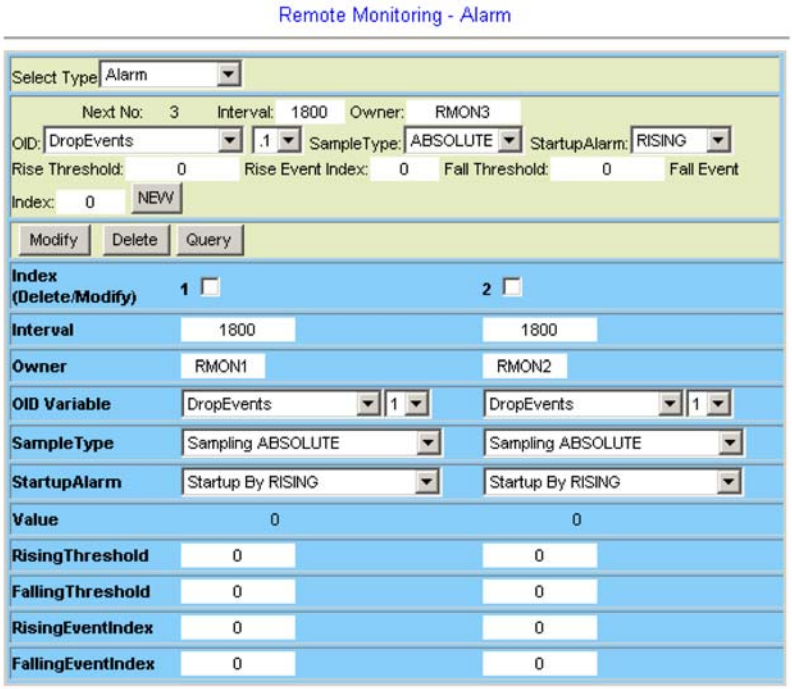


Figure 133. Remote Monitoring - Alarm

Table 74. RMON Alarm Options

Variable	Description
Interval	Alarm Interval. Value range: 0~2147483647 (0: disable)
owner	RMON alarm owner (max 31 characters).
OID	Click on the drop-down list to select variable and index of ETH Statistics table entries.
SampleType	RMON alarm sample type (Compared directly with the thresholds or Difference compared with the thresholds).
StartupAlarm	Options are Rising, Falling, Both.
RisingThreshold	RMON alarm rising threshold (0~4294967295).
FallingThreshold	RMON alarm falling threshold (0~4294967295).
RisingEventIndex	Rising Event entry index.
FallingEventIndex	Falling Event entry index.

The following figure shows an example of RMON alarm for ABSOLUTE sample type. As shown in the figure, the counting value keeps increasing. But when the value overflows, the system will count from zero again. The sample in T2 is the first one crossing the Rising Threshold, so an alarm occurs. No alarms will be generated afterwards unless the counting value overflows and count from zero again (the sample in T10 causes an alarm again).

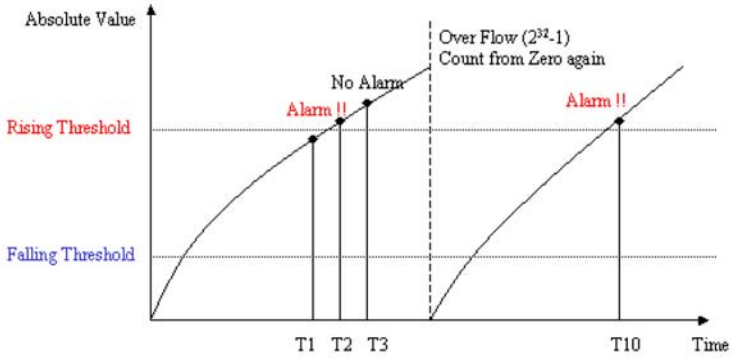


Figure 134. Example: RMON Alarm for ABSOLUTE Sample Type

Another figure shows the example of RMON alarm for DELTA sample type. As shown in the following figure, the delta value varies high and low. The sample in T1 is the first one crossing the Rising Threshold, so an alarm occurs. No alarms will be generated afterwards until T5 sample which is crossing the Falling Threshold (note that the value of the previous sample, T4 sample, is greater than the Falling Threshold and the value of T5 sample). Alarm is not generated for T7 sample since an alarm is already generated for T5 sample and the curve is not in a downward trend around T7. A Rising Threshold crossing alarm is generated again for T10 sample, because a Falling Threshold croprevious Rising Threshold crossing alarm (T1).

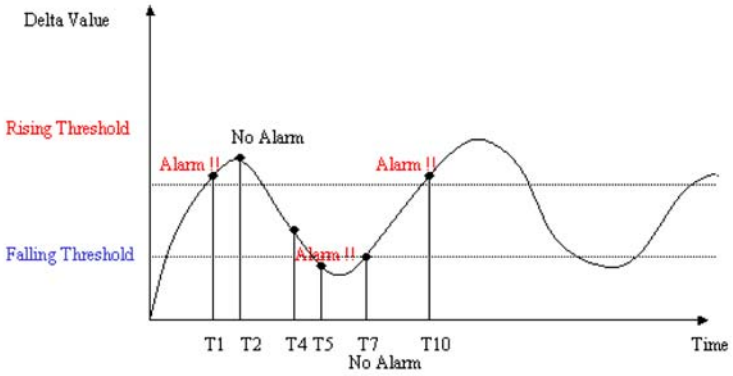


Figure 135. Example: RMON Alarm for DELTA Sample Type

Event

This option allows you to configure the RMON event setting. Click on **New** to create an entry. To modify an entry, click on the index to select the entry, type in new value, and then click on **Modify**. To delete an entry, click on the index to select the entry and then click on **Delete**.

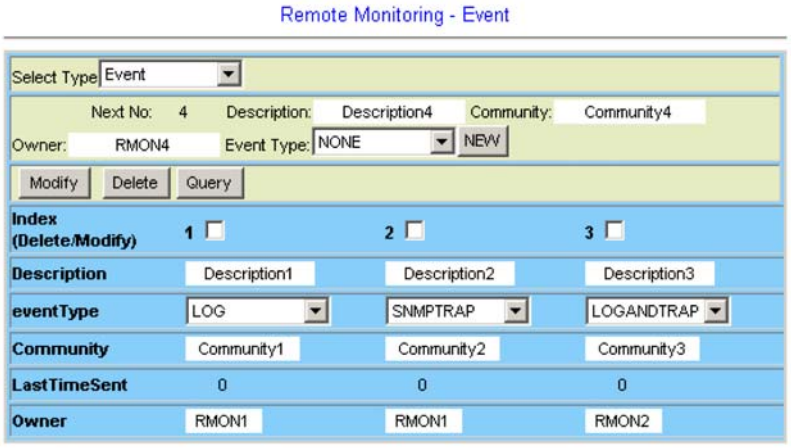


Figure 136. Remote Monitoring - Event

Table 75. RMON Event Options

Variable	Description
Description	Type in a comment describing the event.
Community	If an SNMP trap is to be sent, it will be sent to the SNMP community specified in this column.
Owner	Type in the RMON event owner.
Event Type	Click on the drop-down list and select event type. Options are NONE, LOG (an entry is made in the log table for each event), SNMPTRAP (an SNMP trap is sent to one or more management stations), LOGANDTRAP (log and send trap).
LastTimeSent	The value of System Up Time at the time this event entry last generated an event.

LOG

This option allows you to query the RMON LOG. Click on Query button to display the log. Only the event indices with LOG or LOGANDTRAP event type (see previous section) are possible to appear in the log.

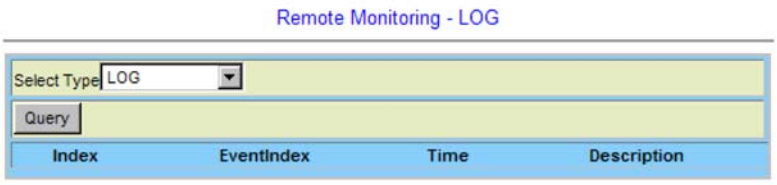


Figure 137. Remote Monitoring - LOG

ADSL Day/Interval

This option allows you to query the ADSL PM 15-Min and Day Statistics. The Model 3124 provides Today and Previous 1 day for Day PM, and also provides Current and Previous 1 ~ 96 interval for 15-Min PM. From the Maintenance menu, click on Performance Monitoring and then ADSL Day/Interval. The following page is displayed. You can select to display one interval or all intervals data of a single port; you can also select to display one interval data for twelve ports (1~12, 13~24) at the same time.

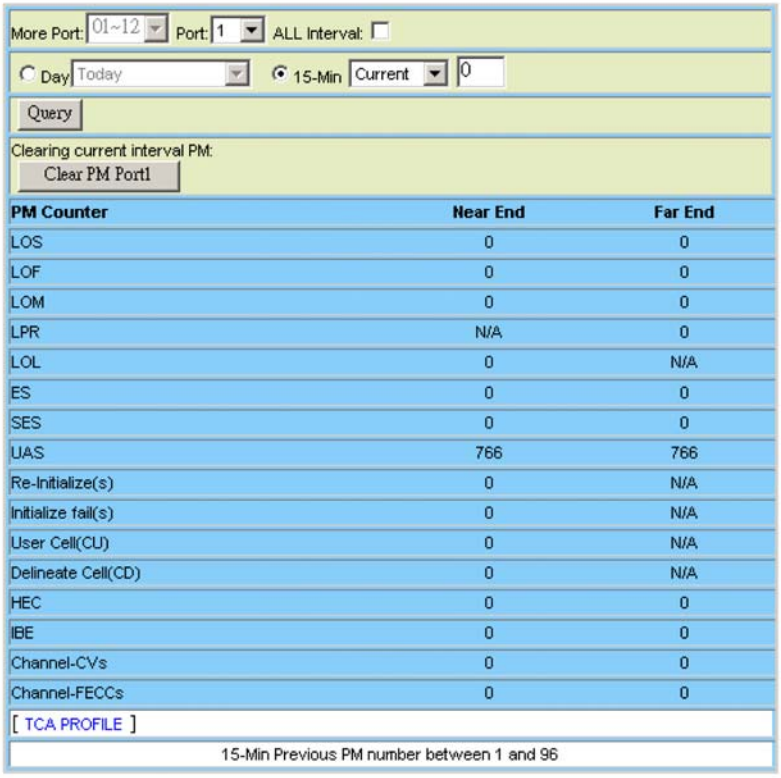


Figure 138. ADSL Line Performance Statistics

Table 76. ADSL Line Performance Statistics

Variable	Description
More Port	Click on the drop-down list and select the port range. Options are: 01~12, 13~24. This drop-down list is available only when All is selected in the Port drop-down list.
Port	Click on the drop-down list and select a line port number (1 ~ 24). You can also select All and then click on More Port to select a port range to view the data of twelve ports at the same time.
All Interval	When you select to view a single port PM data, you can click on this checkbox to display the data of all intervals.
Query	Click on this button to get the most recent data.
Clear PM	Click on this button to clear current PM data of the port you select.
LOS	Loss of Signal
LOF	Loss of Frame

Table 76. ADSL Line Performance Statistics

LOM	Loss of Margin
LPR	Loss of Power (only for Far End)
LOL	Loss of Link (only for Near End)
ES	Errored Seconds
SES	Severely Errored Seconds
UAS	Unavailable Seconds
Re-Initialize	Modem Re-Initialization events (only for Near End)
Initialize fail (s)	Modem Failed Initialization events (only for Near End)
User Cell (CU)	User Total Cell Count (only for Near End)
Delineate Cell (CD)	Delineated Total Cell Count (only for Near End)
HEC	ATM Header Error Count
IBE	Idle Cell Bit Error Count
Channel-CVs	Channel PM - Code Violations
Channel-FECCs	Channel PM- Forward Error Corrections

Chapter 8 Contacting Patton for assistance

Chapter contents

Introduction 132
Contact information 132
Warranty Service and Returned Merchandise Authorizations (RMAs) 132
Warranty coverage 132
Out-of-warranty service 132
Returns for credit 132
Return for credit policy 133
RMA numbers 133
Shipping instructions 133

Introduction

This chapter contains the following information:

- "Contact information"—describes how to contact PATTON technical support for assistance.
- "Warranty Service and Returned Merchandise Authorizations (RMAs)"—contains information about the RAS warranty and obtaining a return merchandise authorization (RMA).

Contact information

Patton Electronics offers a wide array of free technical services. If you have questions about any of our other products we recommend you begin your search for answers by using our technical knowledge base. Here, we have gathered together many of the more commonly asked questions and compiled them into a searchable database to help you quickly solve your problems.

- Online support—available at **www.patton.com**.
- E-mail support—e-mail sent to **support@patton.com** will be answered within 1 business day
- Telephone support—standard telephone support is available Monday through Friday, from 8:00 A.M. to 5:00 P.M. EST (8:00 to 17:00 UTC-5), Monday through Friday by calling **+1 (301) 975-1007**

Warranty Service and Returned Merchandise Authorizations (RMAs)

Patton Electronics is an ISO-9001 certified manufacturer and our products are carefully tested before shipment. All of our products are backed by a comprehensive warranty program.

Note If you purchased your equipment from a Patton Electronics reseller, ask your reseller how you should proceed with warranty service. It is often more convenient for you to work with your local reseller to obtain a replacement. Patton services our products no matter how you acquired them.

Warranty coverage

Our products are under warranty to be free from defects, and we will, at our option, repair or replace the product should it fail within one year from the first date of shipment. Our warranty is limited to defects in workmanship or materials, and does not cover customer damage, lightning or power surge damage, abuse, or unauthorized modification.

Out-of-warranty service

Patton services what we sell, no matter how you acquired it, including malfunctioning products that are no longer under warranty. Our products have a flat fee for repairs. Units damaged by lightning or other catastrophes may require replacement.

Returns for credit

Customer satisfaction is important to us, therefore any product may be returned with authorization within 30 days from the shipment date for a full credit of the purchase price. If you have ordered the wrong equipment or you are dissatisfied in any way, please contact us to request an RMA number to accept your return. Patton is not responsible for equipment returned without a Return Authorization.

Return for credit policy

- Less than 30 days: No Charge. Your credit will be issued upon receipt and inspection of the equipment.
- 30 to 60 days: We will add a 20% restocking charge (crediting your account with 80% of the purchase price).
- Over 60 days: Products will be accepted for repairs only.

RMA numbers

RMA numbers are required for all product returns. You can obtain an RMA by doing one of the following:

- Completing a request on the RMA Request page in the *Support* section at **www.patton.com**
- By calling **+1 (301) 975-1000** and speaking to a Technical Support Engineer
- By sending an e-mail to **returns@patton.com**

All returned units must have the RMA number clearly visible on the outside of the shipping container. Please use the original packing material that the device came in or pack the unit securely to avoid damage during shipping.

Shipping instructions

The RMA number should be clearly visible on the address label. Our shipping address is as follows:

Patton Electronics Company
RMA#: xxxx
7622 Rickenbacker Dr.
Gaithersburg, MD 20879-4773 USA

Patton will ship the equipment back to you in the same manner you ship it to us. Patton will pay the return shipping costs.

Appendix A **Abbreviations**

Chapter contents

Abbreviations 135

Abbreviations

Table 77. Abbreviations

Abbreviation	Description
ACL	Access Control List
ADSL	Asymmetric Digital Subscriber Line
ADSLx	ADSL or ADSL2 or ADSL2+
ATM	Asynchronous Transfer Mode
CBR	Constant Bit Rate
CDVT	Cell Delay Variation Tolerance
CLI	Command Line Interface
DHCP	Dynamic Host Configuration Protocol
IGMP	Internet Group Management Protocol
IP	Internet Protocol
LACP	Link Aggregation Control Protocol
NE	Network Element
PCR	Peak Cell Rate
PPPoE	Point-to-Point Protocol over Ethernet
RMON	Remote Monitoring
SNMP	Simple Network Management Protocol
SNTP	Simple Network Time Protocol
STP	Spanning Tree Protocol
UBR	Unspecified Bit Rate
VBR	Variable Bit Rate
VCI	Virtual Channel Identifier
VLAN	Virtual Local Area Network
VPI	Virtual Path Identifier