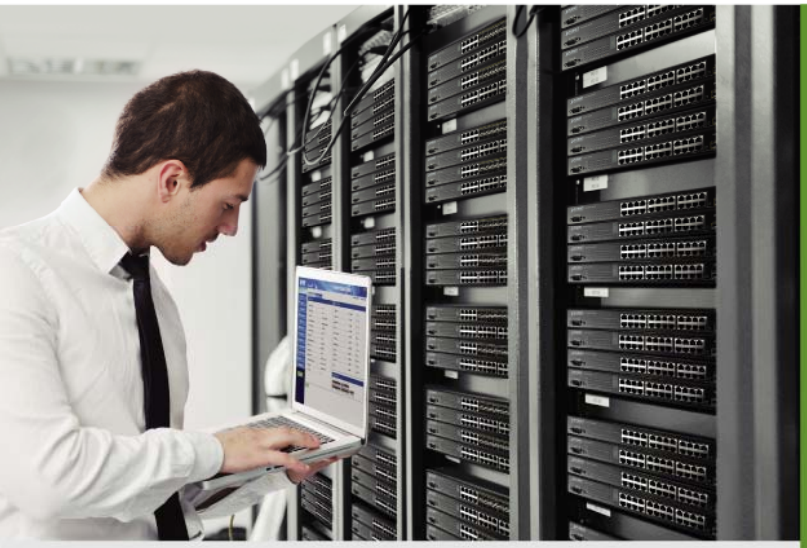
PLANET
Networking & Communication

User's Manual

24-Port VDSL2/ADSL2+ IP DSLAM

► XDL-2420R



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This power required device does not support Standby mode operation.
For energy saving, please remove the power cable to disconnect the device from the power circuit.
Without removing power cable, the device will still consuming power from the power source. In the view of Saving the Energy and reduce the unnecessary power consuming, it is strongly suggested to remove the power connection for the device if this device is not intended to be active.

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Revision

PLANET 24-Port VDSL2 / ADSL2+ + 2-Port Gigabit TP/SFP Combo IP DSLAM User's Manual

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1. INTRODUCTION

The PLANET XDL-2420R comes with the 24-port VDSL2/ADSL2+ and 2-slot TP/SFP fiber optical combo convertibility and robust layer2 features. The description of this model is shown below:

XDL-2420R	24-Port VDSL2 / ADSL2+ + 2-Slot Gigabit TP/SFP Combo IP DSLAM

"**DSLAM**" is used as an alternative name in this user's manual.

1.1 Packet Contents

Open the box of the DSLAM and carefully unpack it. The box should contain the following items:
Check the contents of your package for the following parts:

☑ **The XDL-2420R**	x1
☑ **Quick Installation Guide**	x1
☑ **Rack-mount Accessory Kit**	x1
☑ **Telco-50 (RJ21) Cable**	x2
☑ **Power Cord**	x1

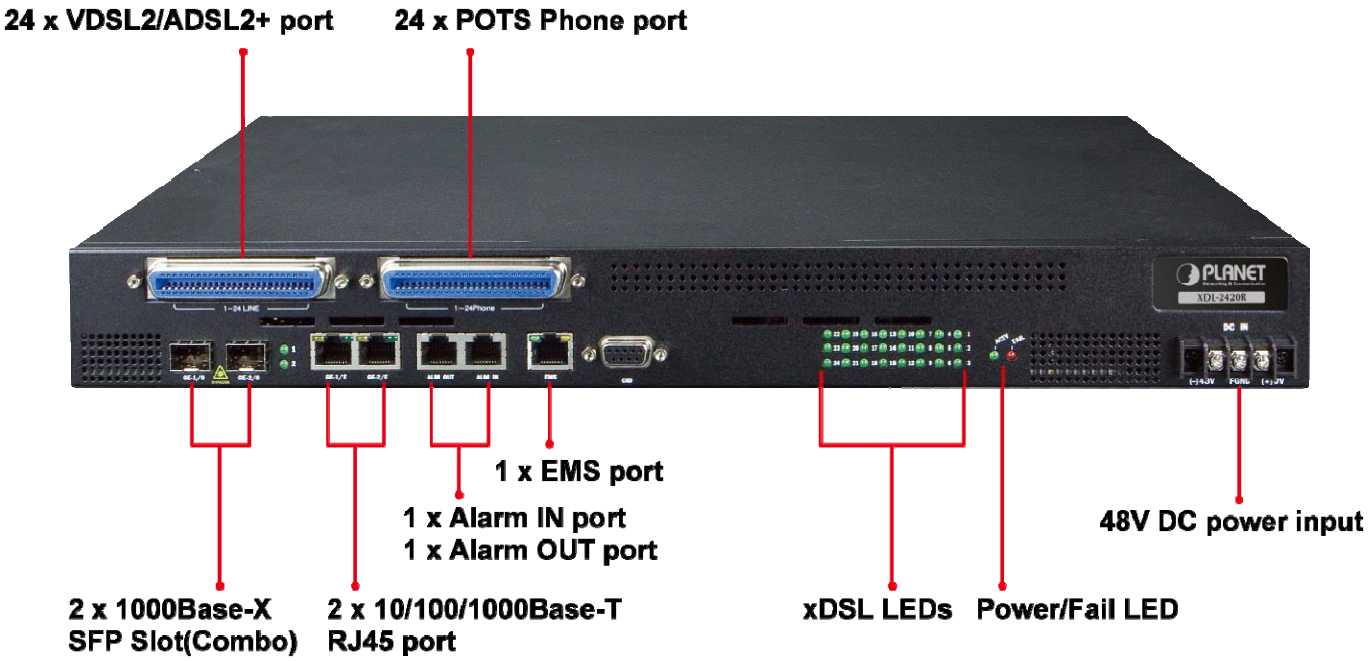
If any item is found missing or damaged, please contact your local reseller for replacement.

1.2 Product Description

Perfectly Designed for FTTx Last Mile Applications

PLANET XDL-2420R is a telecom-level high performance **IP-DSLAM** (Digital Subscriber Line Access Multiplexer) with **24-Port VDSL2 / ADSL2+** and **2 Gigabit TP / SFP** combo interfaces, and **AC and DC Redundant Power System**. The XDL-2420R is fully compliant with ITU-T G.993.2 VDSL2 standard band plan up to 30a profiles. It offers maximum download and upload line rate up to **100/100Mbps** on the existing twisted pair lines.

For ADSL connectivity, the XDL-2420R supports high interoperability and backward compatible for ATU-R and supports ADSL2/ADSL2+ line mode.



The XDL-2420R helps service providers to easily provide high bandwidth demanded triple-play services such as IPTV, HDTV, Video Phone and Internet Gaming at the same copper line and uplink to the core / metro Ethernet network through the two Gigabit fiber optical interfaces. It is an ideal CO solution for **FTTx last mile** applications of broadband access by ISPs, Telecoms and campuses.

Comprehensive and Advanced VDSL2 / ADSL2+ Configuration

For the bandwidth and distance of broadband access, the XDL-2420R IP-DSLAM supports multiple selective VDSL2 profiles (8a, 8b, 8c, 8d, 12a, 12b, 17a and 30a), 997/998 Band plan and ADSL ITU-T G.993.1, ITU-T G.992.3, ITU-T G.992.5, Annex A/B/L/M transmission modes to each subscriber line. Furthermore, it can be configured on a per-link basis for transmission mode, rate limitation, INP (impulse noise protection) and SNR (signal-to-noise) margin. These advanced xDSL functionalities help service providers to adjust the line performance and build a stable and reliable IP DSLAM solution.

Extremely Reliable Design to Ensure Continuous Operation

The XDL-2420R supports the SELT (Single-ended loop testing) and dual power inputs system. SELT, like metallic testing from POTS world, is an automated way of testing a DSL loop from one end to the line, either from the central office (CO) or, less likely from the subscriber's end. Unlike dual-end loop testing (DELT), where someone must install some sort of test device at customer's end of the line, SELT doesn't require a technician or any equipment at the subscriber site.

The XDL-2420R is equipped with one 100~240V AC unit and one -48V DC power supply unit. Dual power systems offer more power deploy flexibility, and the -48V DC power supply implemented makes the XDL-2420R IP DSLAM as a telecom level device that can be located at the electronic room.

1.3 How to Use This Manual

This User's Manual is structured as follows:

Section 2, **INSTALLATION**

The section explains the functions of the IP DSLAM and how to physically install the IP DSLAM.

Section 3, **DSLAM MANAGEMENT**

The section contains the information about the software function of the IP DSLAM.

Section 4, WEB CONFIGURATION

The section explains how to manage the IP DSLAM by Web interface.

Section 5, TROUBLESHOOTING

The chapter explains how to troubleshoot the IP DSLAM.

1.4 Product Features

- **DSL Interfaces**
  - 24 full-duplex VDSL2 / ADSL2+ links via RJ21 (Telco-50) connector
  - 24 corresponding POTS lines via RJ21 (Telco-50) connector
  - Built-in POTS splitter for each VDSL / ADSL port
  - Compatible with PLANET's VDSL2 CPE devices: VC-231, VC-234, VDR-300NU
  - Compatible with PLANET's ADSL2/2+ router: ADN-4101, ADE-3400, ADE-3410, ADE-4400, VDR-300NU
  - Auto-speed function for DSL link (by distance and cable quality)

- **Ethernet Interfaces**
  - 2 10/100/1000Mbps TP and 2 1000Mbps SFP shared combo interfaces
  - 1 alarm in and 1 alarm out copper ports
  - Auto-MDI/MDI-X detection on Gigabit RJ45 port

- **VDSL2 Features**
  - Cost-effective VDSL2 link and central management solution
  - Compliant with ITU-T G.993.2 VDSL2 standard (8a, 8b, 8c, 8d, 12a, 12b, 17a and 30a Profiles)
  - Configurable xDSL line profile and alarm profile
  - DMT (discrete multi-tone) line coding VDSL
  - Up to profile 30a 100/100Mbps symmetric data rate for VDSL2
  - Selectable target data rate and target SNR margin
  - Built-in surge protection against surge damage from high energy spike
  - Voice and data communication can be shared on the existing telephone wire simultaneously
  - Supports downstream / upstream rate control on each port
  - Support VDSL2 mode power back-off

- **ADSL2/2+ Features**
  - Compliant with ADSL2/2+ standard
    - ITU-T G.992.1 Annex A/B
    - ITU-T G.992.3 Annex A/B, Annex L mode1 and mode2
    - ITU-T G.992.5 Annex A/B/M
  - Configurable xDSL line profile and alarm profile
  - Supports upstream 3.5Mbps and downstream 24Mbps at the maximum
  - Supports PPPoE relay
  - Supports ADSL2 mode power back-off

- **Layer 2 Features**
  - Destination Lookup Fail (DLF) / Broadcast Rate Limit
  - IEEE 802.1Q Tag-based VLAN
  - IEEE 802.1ad Q-in-Q VLAN
  - Supports Redundancy / Static Link Aggregation / Daisy Chain uplink application mode
  - 8 queues priority for SP-Priority and WRR-Weight QoS
  - ToS to VLAN priority remark mapping

- **Quality of Service**

- 8 queues priority for all xDSL ports
- SP-Priority / WRR-Weight QoS
- ToS to VLAN priority remark mapping

➢ **Multicast**

- IGMP v2 Snooping
- IGMP Fast Leave

➢ **Security**

- 8 groups Layer2 / 3 / 4 Access Control List
- DHCP Option82

➢ **Management**

- System date and time control
- Single-ended loop testing
- Lamp test
- User management account
- Out-band management
- Remote IP-based management control
- SNMPv1 and V2c
- SNMP trap
- Telnet command line

➢ **Power System**

- 90~240V AC and -48V DC dual power input interfaces
- Supports power redundancy

1.5 Product Specifications

Product		**XDL-2420R**
Hardware Specifications		
DSL Interface		**24-Port VDSL2 / ADSL2+ Line** via 1 RJ21 (Telco-50) connector
		24-Port POTS/Telephone via 1 RJ21 (Telco-50) connectors
1000Mbps Copper Ports		2 10/100/1000Mbps RJ45 auto-negotiation, auto MDI/MDI-X
SFP/mini-GBIC Slots		2 1000BASE-SX/LX/BX, shared with GE1 and GE2 port
Totally Fabric		8.8Gbps / non-blocking maximum
Throughput		6.547Mpps @64Bytes maximum
MAC Address Table		16K entries
LED		System: ACTV (Power LED, Green) Alarm: Fail (Red) VDSL2 / ADSL2+ Link/Sync. Gigabit Port: 1000 Link/Active (Green), 100 Link/Active (Orange)
Dimensions (W x D x H)		436 x 320 x 50.5 mm
Weight		4.8kg
Power Requirements	**AC Input**	90~240V AC, 50-60 Hz
	DC Input	-48V DC, 1.62A (Power Range: -40V to -60V DC)
Power Consumption / Dissipation		75 watts maximum / 257 BTU/hr maximum
Standard Accessory		- 1.4 meter Telco-50 Cable x 2 - 19” rack-mount kit x 1 for 19” rack installation. - AC power cord x 1
xDSL		
VDSL2 Standard		Complies with ITU-T G.993.2 Annex A/B/C
Encoding		VDSL-DMT
VDSL2 Profile		8a/8b/8c/8d/12a/12b/17a/30a 8a, 8b, 8c, 8d 12a, 12b
Band Plan		Selectable band plan for each VDSL line on a per port basis Band plan A: - Profile 998, Annex A of G.993.2; Optimized for symmetric services Band plan B: - Profile 997, Annex B of G.993.2 ; Optimized for asymmetric services
ADSL2 Standard		ANSI T1.413 Issue 2 ITU-T G.992.1, Annex A/B ITU-T G.992.3 (ADSL2) Annex A/B, Annex L mode1 and mode2 ITU-T G.992.5 (ADSL2+) Annex A/B/M
PPPoE		PPPoE relay

xDSL Features	Selectable rate limit control Selectable target SNR (signal to noise ratio) mode POTS voices pass-through
POTS Splitter	Compliant with ETSI TS 101 952-1-1 option A for European The splitter is passive element.
Layer 2 Functions	
Management Interface	Web browser, Telnet
IGMP Snooping	IGMP v2, Fast Leave
Multicast	Supports up to 256 multicast groups
VLAN	IEEE 802.1Q Tag-based VLAN IEEE 802.1ad Q-in-Q VLAN
Link Aggregation	Static port trunk with 1 group of 2-port trunk
QoS	8 priority queue Traffic classification based on - Port priority - TOS to Q-in-Q VLAN priority
Access Control List	Layer 2 / 3 / 4 ACL
Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3z 1000BASE- SX / LX IEEE 802.3ab 1000BASE-T IEEE 802.1ad Q-in-Q VLAN tagging ITU-T G.993.2 VDSL2 (Profile 30a Support), Annex A/B ITU-T G.992.1 ADSL ITU-T G.992.3 ADSL2 ITU-T G.992.5 ADSL2+ RFC 768 TFTP RFC 783 IP RFC 791 ICMP RFC 792 Telnet RFC 854 HTTP
Cables	• VDSL2: twisted-pair telephone wires (AWG24 or better) up to 1.4km • 10/100BASE-TX: 2-pair UTP Cat.5, up to 100m (328ft) • 1000BASE-T: 4-pair UTP Cat.5E, up to 100m • 1000BASE-SX: 50/125µm and 62.5/125µm fiber optic cable, up to 550m • 1000BASE-LX: 9/125µm fiber optic cable, up to 10km 50/125µm and 62.5/125µm fiber optic cable, up to 550m
SNMP MIB	Private MIBs
Environment	
Temperature	0~50 degrees C
Humidity	5~90% (non-condensing)

2. INSTALLATION

This section describes the hardware features and installation of the DSLAM on the desktop or rack mount. For easier management and control of the DSLAM, familiarize yourself with its display indicators, and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the DSLAM, please read this chapter completely.

2.1 Hardware Description

2.1.1 DSLAM Front Panel

The front panel provides a simple interface monitoring the DSLAM. Figure 2-1 shows the front panel of the DSLAM.

XDL-2420R Front Panel

Figure 2-1: Front Panel of DSLAM

■ **Gigabit TP interface**

10/100/1000BASE-T Copper, RJ-45 twisted-pair: Up to 100 meters.

■ **SFP slots**

1000BASE-X mini-GBIC slot, SFP (Small Factor Pluggable) transceiver module: From 550 meters to 2km (multi-mode fiber), up to above 10/20/30/40/50/70/120 kilometers (single mode fiber).

■ **Console Port**

The console port is a DB9, RS-232 male serial port connector. This port is for engineering use, and you can use a straight DB9 console cable to use it. The COM port properties is 115200, n, 8, 1.

■ **xDSL and POTS interface**

There are 24 VDSL2 / ADSL 2+ ports and 24 POTS ports with 2 Telco-50 / RJ21 type connectors on the front panel of XDL-2420R. Each port has a built-in POTS splitter that helps the voice of telephone and data of network applications transmit over the same wire without interruption.

The xDSL port supports detecting transmission rate automatically that operates in different band allocation and results in different upstream and downstream bandwidths, and due to different telephone line quality, cross talk or extension distance may affect actual achievable speed; you can configure individual port in built-in management interface for optimized connectivity.

1. The payload rate is about 9% less than the line rate due to framing overhead.
2. AWG 26 (0.4mm) cable can also be used but the distance is 20% to 40% shorter than the above table.
3. Each terminated bridge tap may reduce the xDSL link distance by 90m.The quality of the cable, the size of the cable bundles, and the cross talk within the bundle can also affect the overall reach.

■ **DC IN Power Connector**

The front panel of DSLAM contains a DC power connector, which accepts DC power input voltage of -48V DC. Connect the power cable to the DSLAM at the input terminal block. The size of the three screws in the terminal block is M3.5.

2.1.2 LED Indications

The front panel LEDs indicates instant status of power and system status, fan status, port links and activity. It helps monitor troubleshoot when needed. Figure 2-2 shows the LED indications of the DSLAM.

XDL-2420R LED Indication

Figure 2-2: DSLAM LED on Front Panel

DSLAMP LED Indication Table

■ **System**

LED	Color	Function	
ACTV	Green	**On:**	Indicates that the IP DSLAM is powered **on**.
		Off:	Indicates that the IP DSLAM is powered **off**.
		Blink	Indicates that the IP DSLAM is booting.
Fail	Red	**On:**	Indicates that the system is inactive.
		Off:	Indicate that the system is active without problem.

■ **Per VDSL Interface (Port-1 to Port-24)**

LED	Color	Function	
DSL	Green	**On:**	Indicates that the VDSL link is established.
		Slow Blink:	Indicates that the VDSL is chaining with remote CPE.
		Quick Blink:	Indicates that the Data link is actively sending or receiving data over that DSL port.
		Off:	Indicates that the DSL has not activated.

■ **10/100/1000BASE-T Copper / 1000BASE-SX/LX SFP Interface (GE1 and GE2)**

LED	Color	Function	
Copper Port	Green	**On:**	Indicates the link through that port is successfully established.
		Blink:	Indicates that the DSLAM is actively sending or receiving data over that port. (LNK/ACT LED is orange in color).
		Off:	Indicates that the port has linked down.
Fiber Port	Green	**On:**	Indicates the link through that port is successfully established.
		Blink:	Indicates that the DSLAM is actively sending or receiving data over that port.
		Off:	Indicates that the port has linked down.

2.1.3 DSLAM Rear Panel

The rear panel of the DSLAM indicates an AC inlet power socket, which accepts input power from 100 to 240V AC, 50-60Hz. Figure 2-3 shows the rear panel of the DSLAM.

DSLAMP Rear Panel

Figure 2-3: Rear Panel of **DSLAM**

■ **AC Power Receptacle**

For compatibility with electrical service in most areas of the world, the DSLAM's power supply automatically adjusts to line power in the range of 100-240V AC and 50/60 Hz.

Plug the female end of the power cord firmly into the receptacle on the rear panel of the DSLAM. Plug the other end of the power cord into an electrical service outlet and the power will be ready.

The device is a power-required device, which means it will not work till it is powered. If your networks should be active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime. In some areas, installing a surge suppression device may also help to protect your DSLAM from being damaged by unregulated surge or current to the DSLAM or the power adapter.

2.2 Installing the DSLAM

This section describes how to install your DSLAM and make connections to the DSLAM. Please read the following topics and perform the procedures in the order being presented. To install your DSLAM on a desktop or shelf, simply complete the following steps.

2.2.1 Rack Mounting

To install the DSLAM in a 19-inch standard rack, please follow the instructions described below.

Step1: Place the DSLAM on a hard flat surface, with the front panel positioned towards the front side.

Step2: Attach the rack-mount bracket to each side of the DSLAM with supplied screws attached to the package.

Figure 2-4 shows how to attach brackets to one side of the DSLAM.

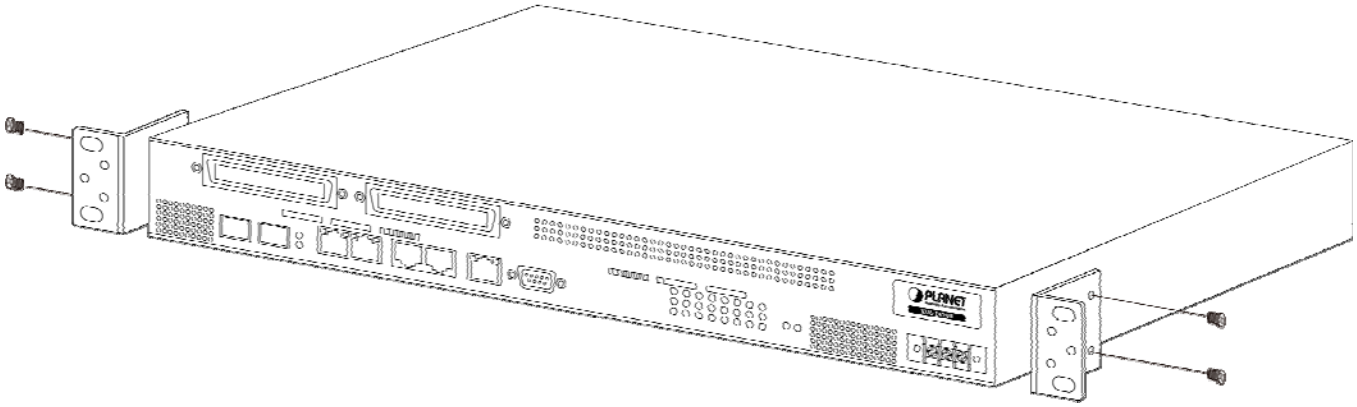


Figure 2-4: Attach Brackets to the DSLAM.

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate the warranty.

Step3: Secure the brackets tightly.

Step4: Follow the same steps to attach the second bracket to the opposite side.

Step5: After the brackets are attached to the DSLAM, use suitable screws to securely attach the brackets to the rack, as shown in Figure 2-5.

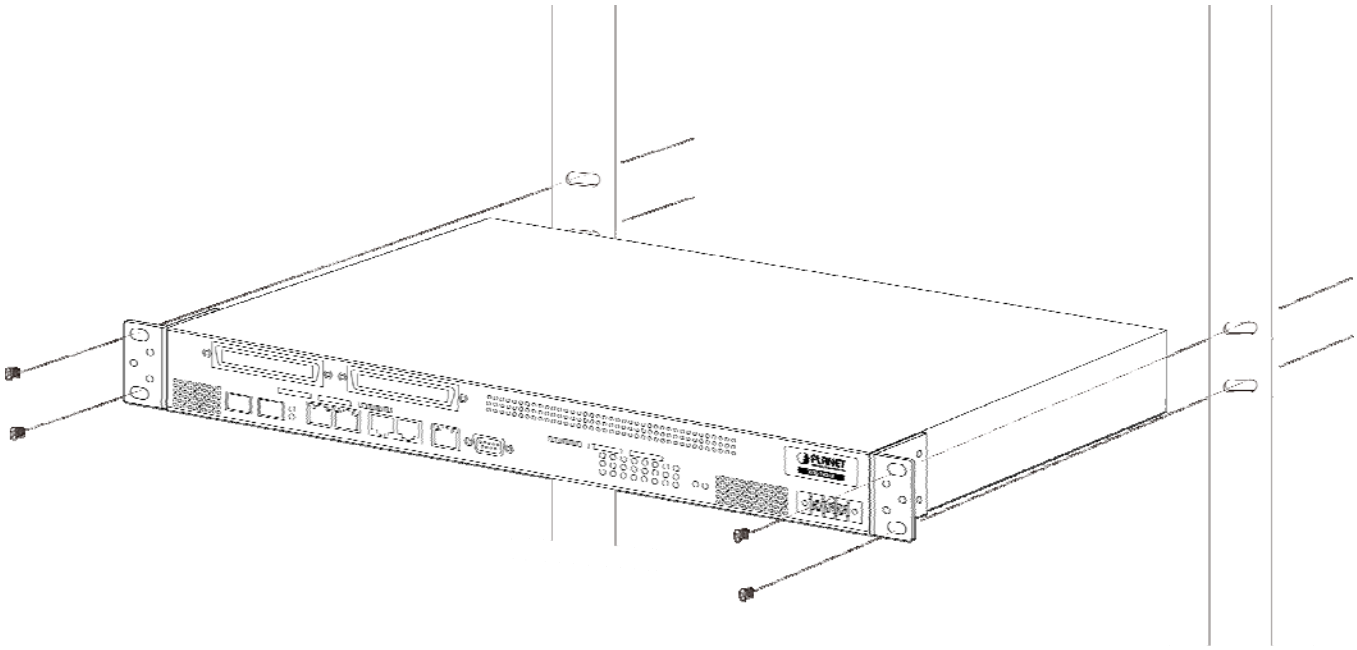


Figure 2-5: Mounting DSLAM on a Rack

Step6: Proceeds with steps 4 and 5 of session 2.2.1 Desktop Installation to connect the network cabling and supply power to the DSLAM.

2.2.2 Installing the SFP Transceiver

The sections describe how to insert an SFP transceiver into an SFP slot. The SFP transceivers are hot-pluggable and hot-swappable. You can plug-in and out the transceiver to/from any SFP port without having to power down the DSLAM, as the Figure 2-6 shows.

Figure 2-6: Plug-in the SFP Transceiver

■ Approved PLANET SFP Transceivers

PLANET DSLAM supports both single mode and multi-mode SFP transceiver. The following list of approved PLANET SFP transceivers is correct at the time of publication:

Gigabit SFP Transceiver Modules

- **MGB-GT** SFP-Port 1000BASE-T Module
- **MGB-SX** SFP-Port 1000BASE-SX mini-GBIC module
- **MGB-LX** SFP-Port 1000BASE-LX mini-GBIC module
- **MGB-L50** SFP-Port 1000BASE-LX mini-GBIC module -50KM
- **MGB-L70** SFP-Port 1000BASE-LX mini-GBIC module -70KM
- **MGB-L120** SFP-Port 1000BASE-LX mini-GBIC module -120KM
- **MGB-LA10** SFP-Port 1000BASE-LX (WDM,TX:1310nm) -10KM
- **MGB-LA20** SFP-Port 1000BASE-LX (WDM,TX:1310nm) -20KM
- **MGB-LB20** SFP-Port 1000BASE-LX (WDM,TX:1550nm) -20KM
- **MGB-LA40** SFP-Port 1000BASE-LX (WDM,TX:1310nm) -40KM
- **MGB-LB40** SFP-Port 1000BASE-LX (WDM,TX:1550nm) -40KM
- **MGB-TSX** SFP-Port 1000BASE-SX mini-GBIC module - 550m (-40~75℃)
- **MGB-TLX** SFP-Port 1000BASE-LX mini-GBIC module - 10km (-40~75℃)
- **MGB-TL30** SFP-Port 1000BASE-LX mini-GBIC module - 30km (-40~75℃)
- **MGB-TL70** SFP-Port 1000BASE-LX mini-GBIC module - 70km (-40~75℃)
- **MGB-TLA10** SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC

module-10km (-40~75℃)

- **MGB-TLB10** SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module-10km (-40~75℃)
- **MGB-TLA20** SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module-20km (-40~75℃)
- **MGB-TLB20** SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module-20km (-40~75℃)
- **MGB-TLA40** SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module-40km (-40~75℃)
- **MGB-TLB40** SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module-40km (-40~75℃)
- **MGB-TLA60** SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module-60km (-40~75℃)
- **MGB-TLB60** SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module-60km (-40~75℃)

1. It is recommended to use PLANET SFP transceiver on the DSLAM. If you insert an un-supported SFP transceiver into the DSLAM, the DSLAM will not recognize it.
2. In the installation steps below, this Manual uses Gigabit SFP transceiver as an example. However, the steps for Fast Ethernet SFP transceiver are similar.

1. Before we connect DSLAM to the other network device, we have to make sure both sides of the SFP transceivers are with the same media type, for example: 1000BASE-SX to 1000BASE-SX, 1000Bas-LX to 1000BASE-LX.
2. Check whether the fiber-optic cable type matches with the SFP transceiver requirement.
   - To connect to 1000BASE-SX SFP transceiver, please use the multi-mode fiber cable with one side being the male duplex LC connector type.
   - To connect to 1000BASE-LX SFP transceiver, please use the single-mode fiber cable with one side being the male duplex LC connector type.

■ Connect the Fiber Cable

1. Insert the duplex LC connector into the SFP transceiver.
2. Connect the other end of the cable to a device with SFP transceiver installed.
3. Check the LNK/ACT LED of the SFP slot on the front of the DSLAM. Ensure that the SFP transceiver is operating correctly.
4. Check the Link mode of the SFP port if the link fails.

■ Remove the Transceiver Module

1. Make sure there is no network activity.
2. Remove the fiber-optic cable gently.
3. Lift up the lever of the MGB module and turn it to a horizontal position.
4. Pull out the module gently through the lever.

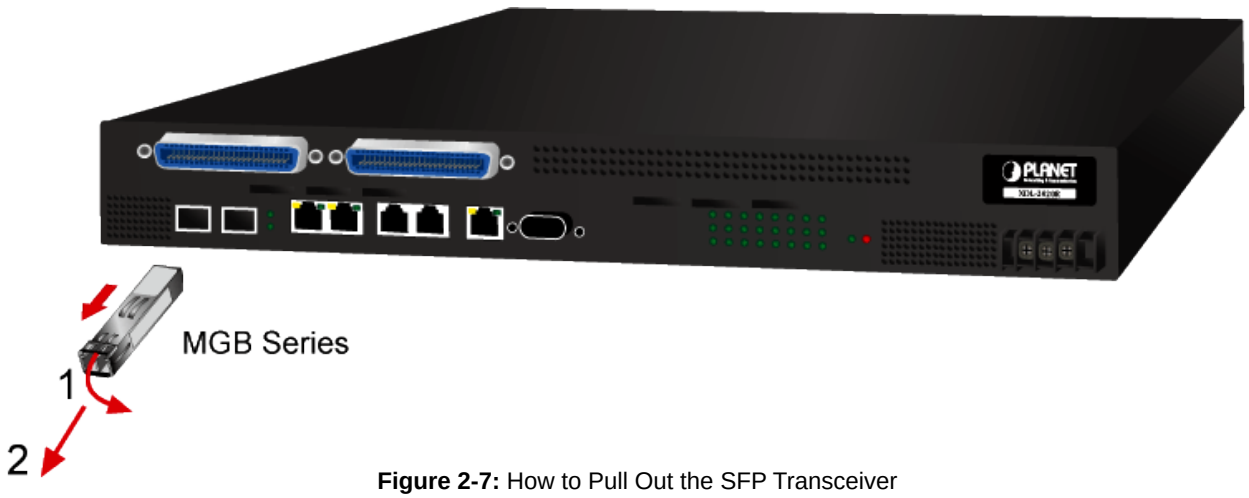


Figure 2-7: How to Pull Out the SFP Transceiver

Note	Never pull out the module without lifting up the lever of the module and turning it to a horizontal position. Directly pulling out the module could damage the module and the SFP module slot of the DSLAM.

2.2.3 Wiring for DSL Ports

The DSL port of XDL-2420R uses one RJ21 (Telco-50) connector to connect to a patch panel and then link up to 24 DSL CPEs which can be just directly connected to the remote CPEs through structured or unstructured wiring, such as the existing telephone lines. Each XDL-2420R has a built-in pain old telephone service **(POTS)** splitter to transmit both DSL traffic and telephone services, such as voice or fax through the same phone wire. The splitter routes DSL data (high-frequency) and voice (low-frequency) traffic from the telephone line and private branch exchange **(PBX)** DSLAM or public switched telephone network **(PSTN)**.

The connection diagrams are as follows:

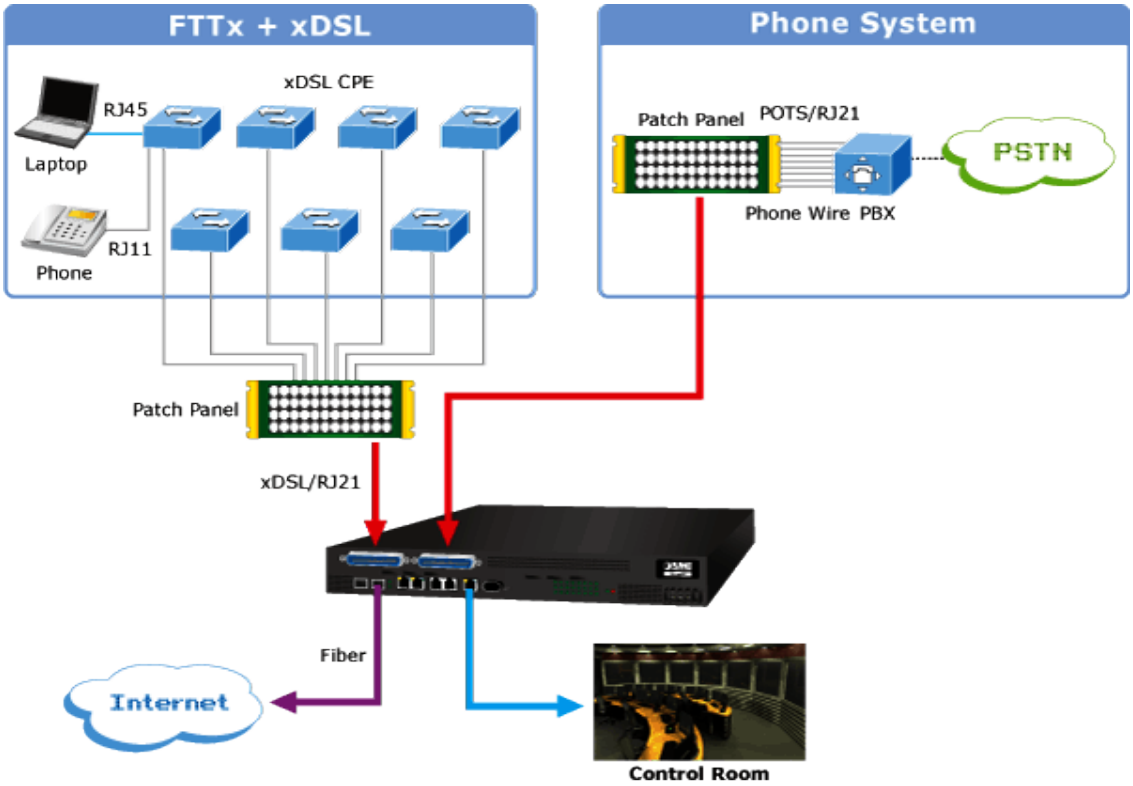


Figure 2-8: xDSL and POTS connection diagram

The DSL port and POTS port of the XDL-2420R always connect to a patch panel. The connection between the XDL-2420R and the patch panel is made by an RJ21 (Telco-50) interface connector and cable, as shown in Figure 2-9.

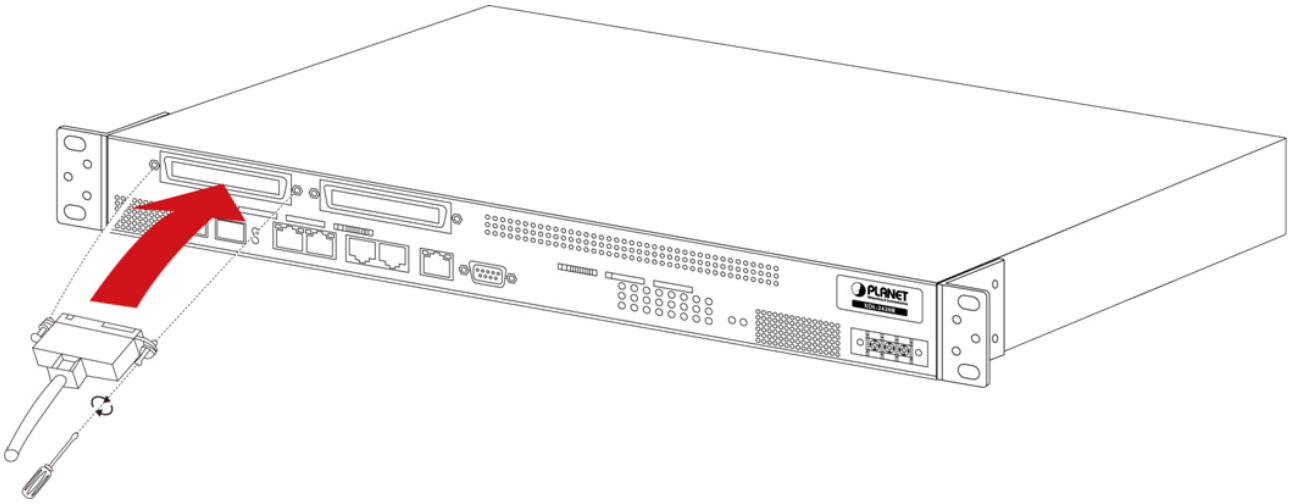


Figure 2-9: Connect RJ21 (Telco-50) cable to XDL-2420R

3. DSLAM MANAGEMENT

This chapter explains the methods that you can use to configure management access to the DSLAM. It describes the types of management applications and the communication and management protocols that deliver data between your management device (workstation or personal computer) and the system. It also contains information about port connection options.

This chapter covers the following topics:

- Requirements
- Management Access Overview
- Web Management Access
- SNMP Access
- Standards, Protocols, and Related Reading

3.1 Requirements

- We suggest using **Firefox or Microsoft IE 9 or later to** operate the DSLAM.
- Workstation is installed with **Ethernet NIC** (Network Interface Card).
- Ethernet Port connects
  - Network cables -- Use standard network (UTP) cables with RJ45 connectors.
- The above Workstation is installed with **Web browser** and **JAVA runtime environment** plug-in.

3.2 Web Management

The DSLAM offers out-of-band management features that allow users to manage the DSLAM from anywhere on the network through a standard browser such as Firefox or Microsoft Internet Explorer. After you set up your IP address for the DSLAM, you can access the DSLAM's Web interface applications directly from your Web browser by entering the IP address of the DSLAM.

Please connect management PC to the **EMS** port and then you can access Web UI of the DSLAM via web browser.

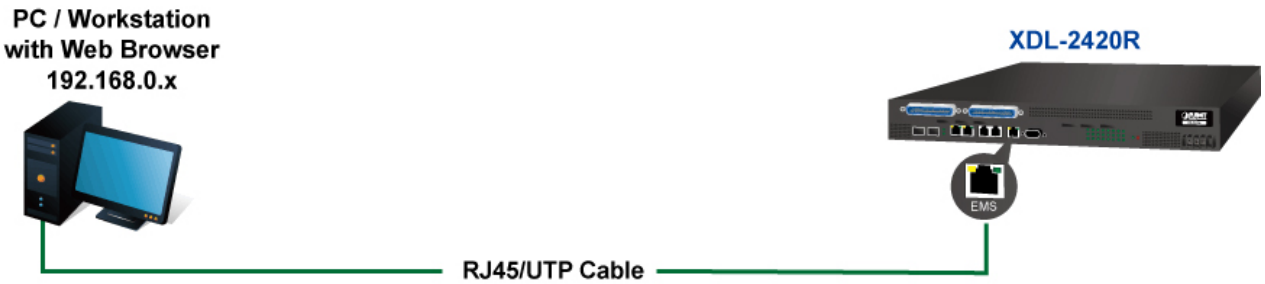


Figure 3-1: Web Management

You can then use your Web browser to list and manage the DSLAM configuration parameters from **Firefox, Microsoft Internet Explorer 9.0** or later and **Safari.**

Figure 3-2: Web Main Screen of DSLAM

4. WEB CONFIGURATION

The DSLAM can be configured through an Ethernet connection, making sure the manager PC must be set on the same IP subnet address with the DSLAM.

For example, the default IP address of the DSLAM is ***192.168.0.100***, then the manager PC should be set at **192.168.0.x** (where x is a number between 1 and 254, except 100), and the default subnet mask is 255.255.255.0.

If you have changed the default IP address of the DSLAM to 192.168.1.1 with subnet mask 255.255.255.0 via console, then the manager PC should be set at 192.168.1.x (where x is a number between 2 and 254) to do the relative configuration on manager PC.

The DSLAM supports out-of-band management. Please connect your manager PC to **EMS** port for accessing the Web UI.

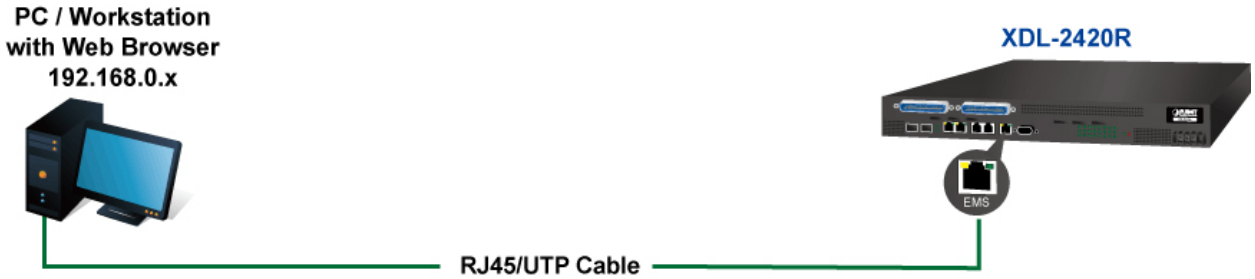


Figure 4-1-1: Web Management

■ **Logging on the DSLAM**

1. Use Internet Explorer 7.0 or above Web browser. Enter the factory-default IP address to access the Web interface. The factory-default IP address is shown as follows:

   http://192.168.0.100

2. When the following login screen appears, please enter **"admin" for both** default username and password (or the username and password you have changed via console) to login the main screen of DSLAM. The login screen in Figure 4-1-2 appears.

Figure 4-1-2: Login Screen

Default User Name: **admin**

Default Password: **admin**

After entering the username and password, the main screen appears as shown in Figure 4-1-3.

Figure 4-1-3: Web Main Page

Now, you can use the Web management interface to continue the DSLAM management or manage the DSLAM by Web interface. The DSLAM menu on the left of the web page lets you access all the commands and statistics the DSLAM provides.

1. It is recommended to use Internet Explore 9.0 or above to access DSLAM.
2. When you have finished your configuration, please apply “Save Configuration” immediately, or configuration will be lost after the system starts to reboot.
3. For security reason, please change and memorize the new password after this first setup.

4.1 Main Web Page

The DSLAM provides a Web-based browser interface for configuring and managing it. This interface allows you to access the DSLAM using the Web browser of your choice. This chapter describes how to use the DSLAM's Web browser interface to configure and manage it.

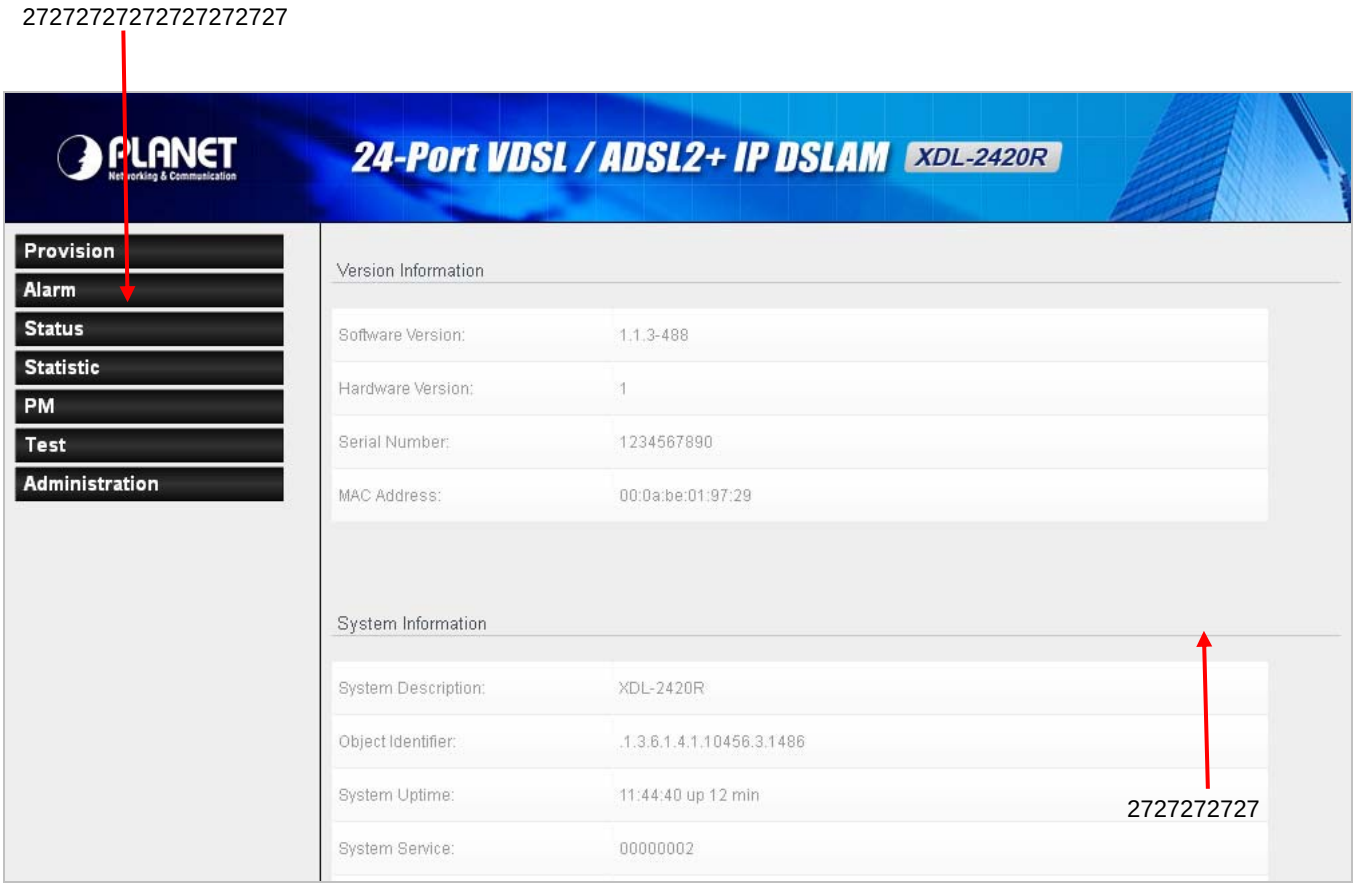


Figure 4-1-4: Web Main Page

Main Menu

Using the onboard web agent, you can define system parameters, manage and control the DSLAM, and all its ports, or monitor network conditions. Via the Web management, the administrator can set up the DSLAM by selecting the functions those listed in the Main Function. The screen in Figure 4-1-5 appears.

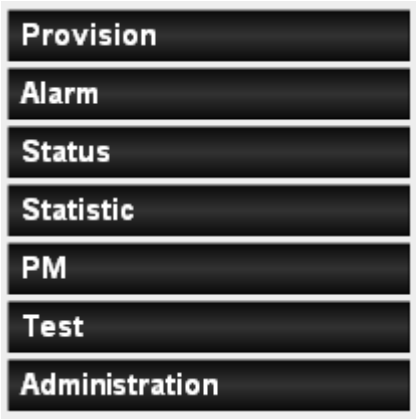


Figure 4-1-5: DSLAM Main Functions Menu

4.2 Provision

This section allows user to set up xDSL, IGMP, VLAN, QoS, DHCP, PPPoE and ACL features.

4.2.1 Modify Age Time

Modify age time is for you to set the time to clear system MAC address table. The screen in Figure 4-2-1 appears.

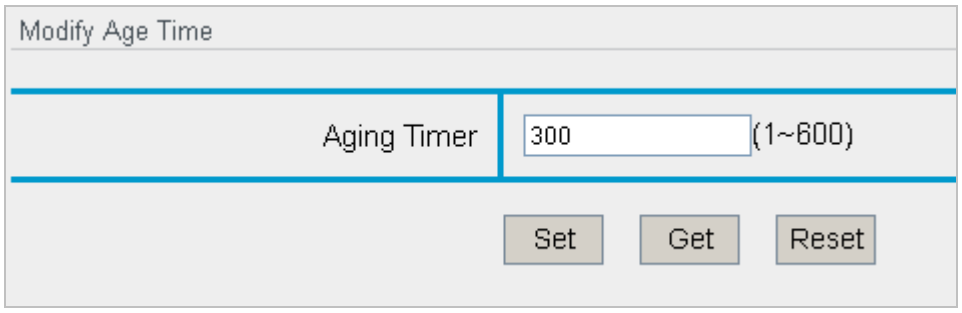


Figure 4-2-1: Modify Age Time Page Screenshot

4.2.2 xDSL Line Activate

This section is for you to activate and indicate xDSL port. By default, xDSL is disabled. User has to activate the port to enable xDSL device to chain with XDL-2420R. The screen in Figure 4-2-2 appears.

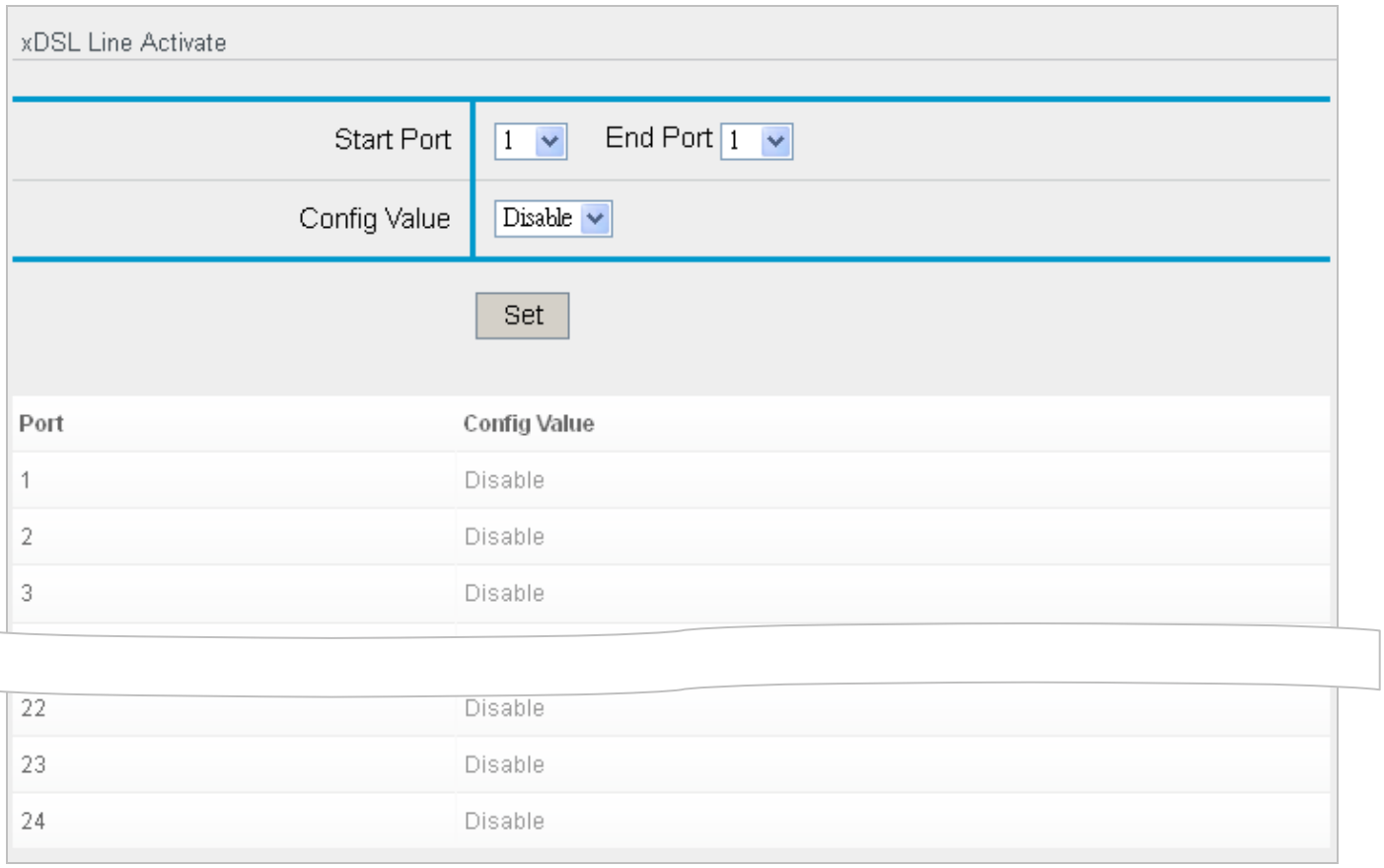


Figure 4-2-2: xDSL Line Activate Page Screenshot

The Page includes the following fields:

Object	Description
• **Start Port**	Allows user to set up port range.
• **End Port**	Allows user to set up port range.
• **Config Value**	Enable: Enables xDSL port. Disable: Disables xDSL port.

Button

Set: Save configuration.

4.2.3 Apply xDSL Line Profile

This section is for you to apply xDSL line profile to xDSL port. Before you change line profile to xDSL port, you have to create an xDSL line profile from xDSL Line Profile page. As default setting, Line-default profile has been applied to each xDSL port. The screen in Figure 4-2-3 appears.

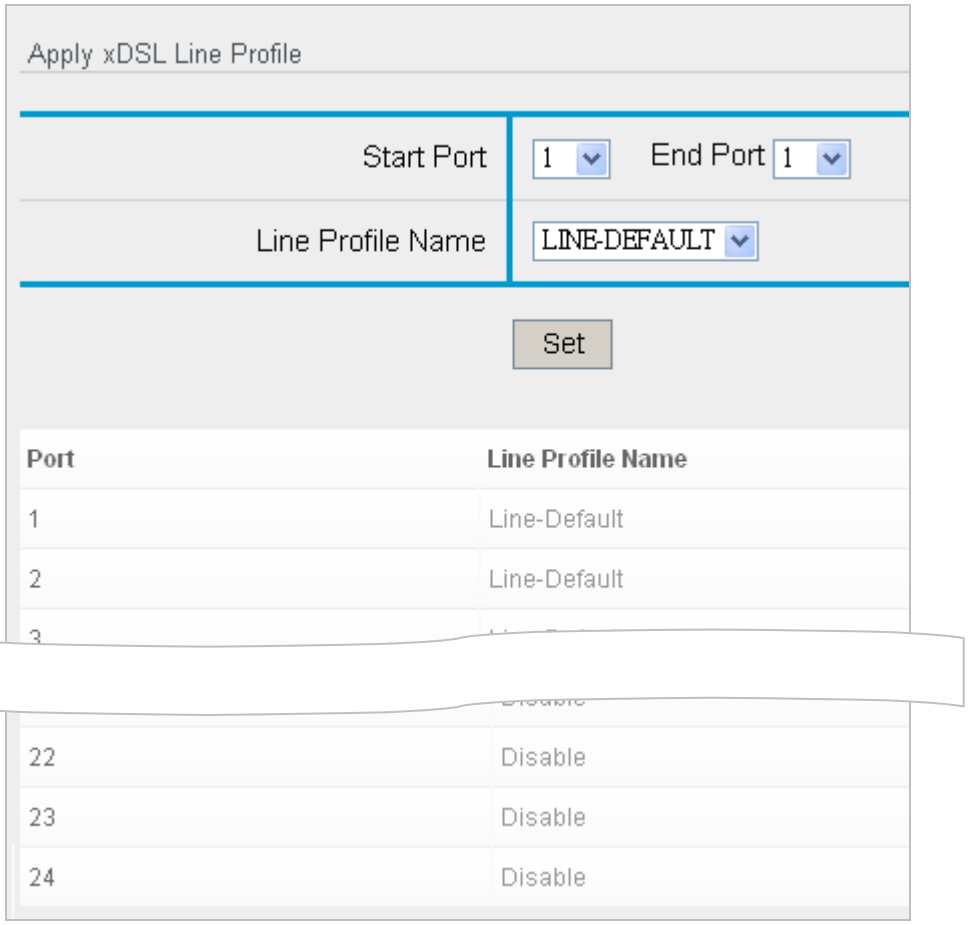


Figure 4-2-3: Apply xDSL Line Profile Page Screenshot

The Page includes the following fields:

Object	Description
• **Start Port**	Allows user to set up port range.
• **End Port**	Allows user to set up port range.
• **Line Profile Name**	Allows user to indicate a created xDSL line profile name. Default setting is **LINE-DEFAULT**.

Button

Set: Save configuration.

4.2.4 Apply xDSL Alarm Profile

This section is for you to apply xDSL alarm profile to xDSL port. Before you change alarm profile name, you have to create a new profile from xDSL Alarm Profile page. However, its default setting “ALARM-DEFAULT” profile has been applied. The screen in Figure 4-2-4 appears.

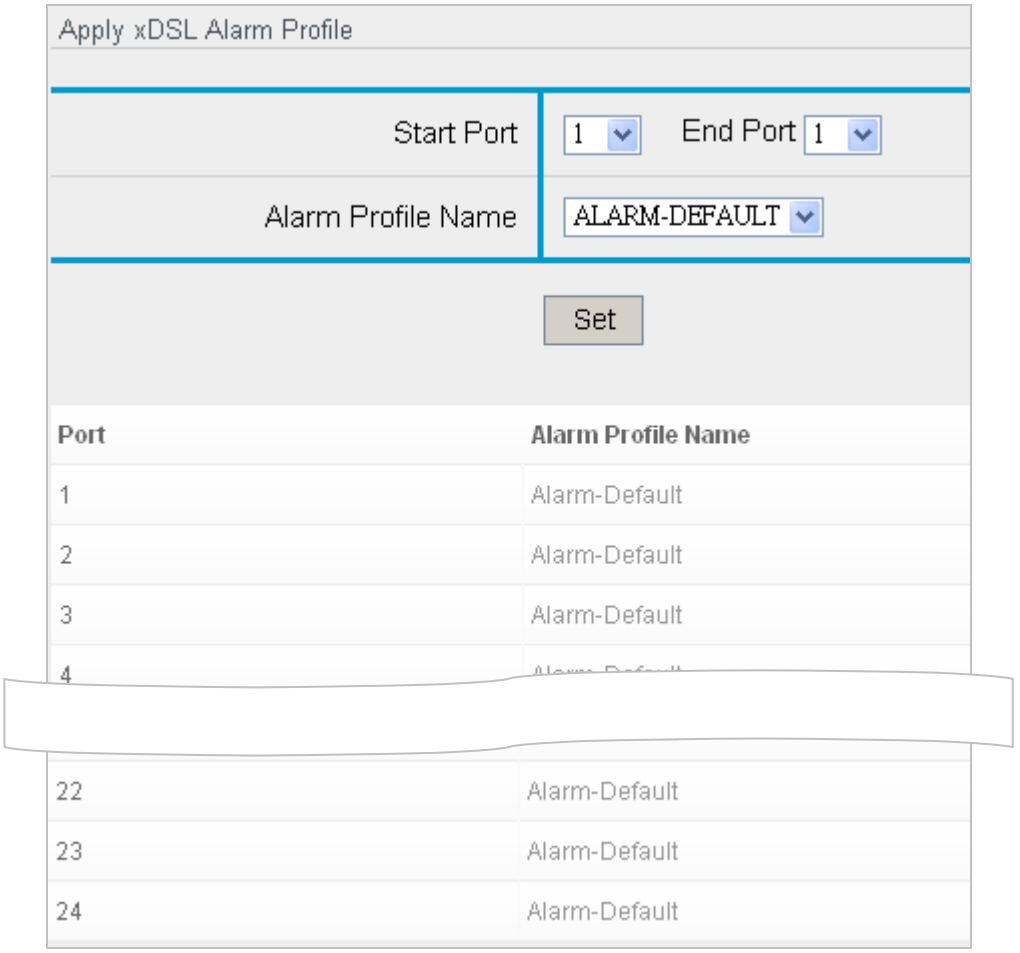


Figure 4-2-4: Apply xDSL Alarm Profile Page Screenshot

The page includes the following fields:

Object	Description
• **Start Port**	Allows user to set up port range.
• **End Port**	Allows user to set up port range.
• **Alarm Profile Name**	Allows user to indicate a created alarm profile name. Default setting is **LINE-DEFAULT**.

Button

Set: Save configuration.

4.2.5 VLAN Ethernet Type

This section is for you to set up service VLAN type and customer VLAN type. It is IEEE 802.1ad Q-in-Q concept. Before you set up the type, please confirm where it is 88A8 or 8100 from your network and then set up the VLAN type as the same as your network. By default, they are both 8100. The screen in Figure 4-2-5 appears.

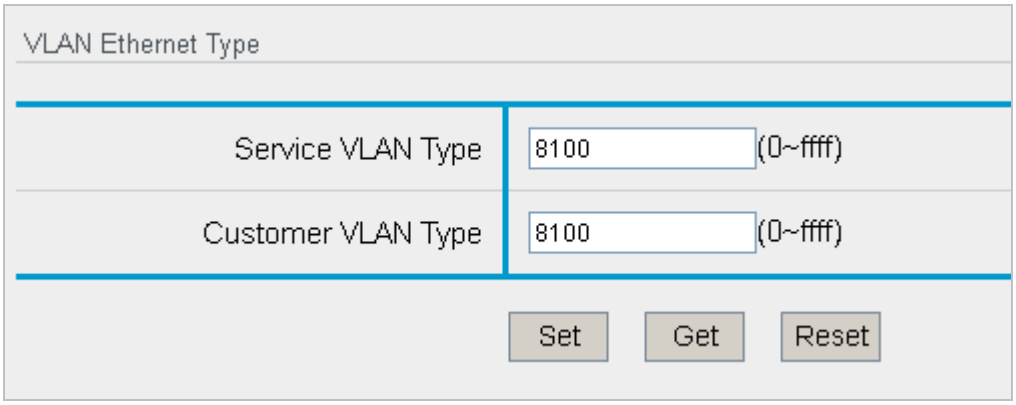


Figure 4-2-5: VLAN Ethernet Type Page Screenshot

The Page includes the following fields:

Object	Description
• **Service VLAN Type**	Allows user to set up Service VLAN type from 0 to ffff as default setting is 8100. This is 16-hexadecimal code.
• **Customer VLAN Type**	Allows user to set up Customer VLAN type from 0 to ffff as default setting is 8100. This is 16-hexadecimal code.

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

4.2.6 DLF/Broadcast Rate Limit

Destination Lookup Failure -- The Destination Lookup Failure (DLF) setting is concerned with comparing the destination MAC address of a packet received by the switch to the forwarding database. When the switch receives a packet, it scans the forwarding database and looks for a match to the destination MAC address in the received packet. If the MAC address is not present, then the packet is flooded according to the VLAN rules. By default, this setting is disabled on the switch which means that all DLF packets are automatically forwarded according to the VLAN rules. Broadcast Setting - The broadcast setting applies to allowing or denying broadcast packets on each port. The screen in Figure 4-2-6 appears.

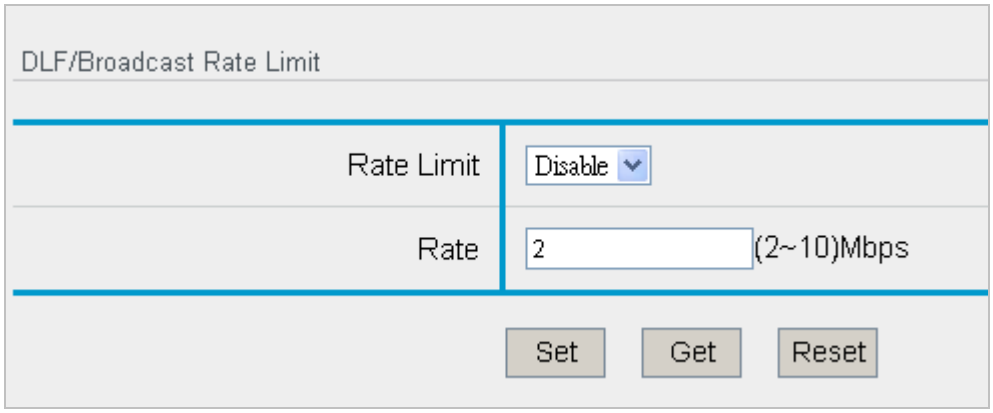


Figure 4-2-6: DLF/Broadcast Rate Limit Page Screenshot

The Page includes the following fields:

Object	Description
• **Rate Limit**	Enables or disables the rate limitation function. Default setting is disable.
• **Rate**	Specifies the maximum rate for transmission. **Valid range:** 2~10

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

4.2.7 Uplink Application Mode

This section introduces how to configure uplink Interface about system side connectivity for two GE/FE ports with 1:1 redundancy (active/standby), link aggregation (static trunk), or daisy chain. The screen in Figure 4-2-7 appears.

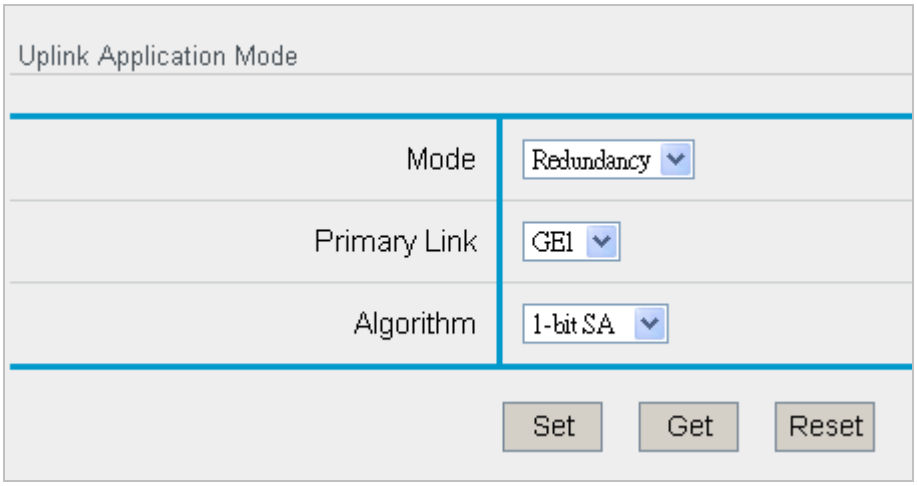


Figure 4-2-7: Uplink Application Mode Page Screenshot

The page includes the following fields:

Object	Description
• **Mode**	**Valid option:** ● Redundancy: GE1 or GE2 works as primary link while the other works as backup link (see Figure 4-2-8) ● Aggregation: GE1 or GE2 works together under aggregated algorithm to increase throughput (see **錯誤! 找不到參照來源。**-9). **Daisy Chain: GE1 or GE2 works as uplink while the other works as daisy link to implement device cascade.** (see Figure 4-2-10)
• **Primary Link**	Valid option**: GE1, GE2 (Default primary link setting is GE1)**
• **Algorithm**	For aggregation upstream, packets are distributed into GE1 and GE2 according to 1-bit/6-bit SA distribution algorithm. Valid option: **1-bit SA, 6-bits SA**

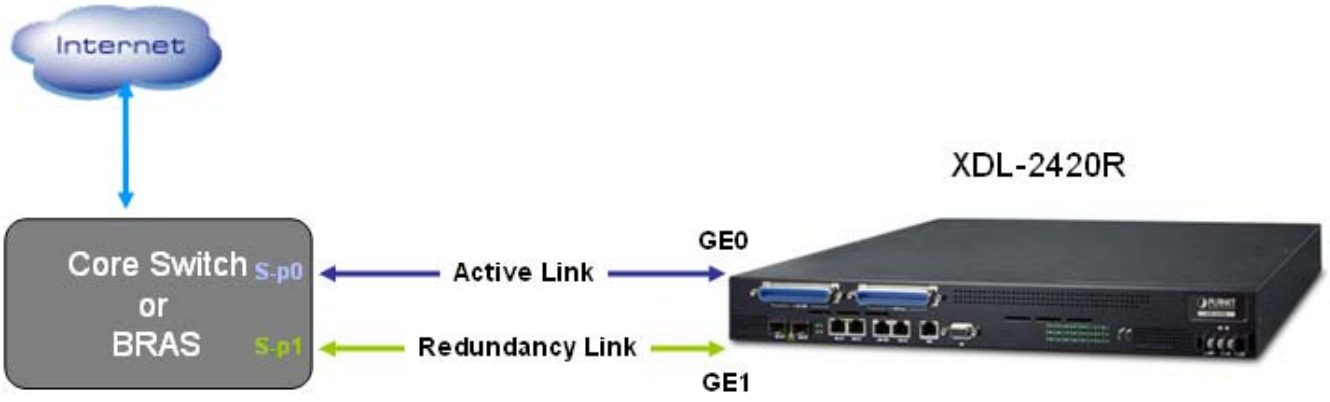


Figure 4-2-8: Uplink Application Mode of Redundancy

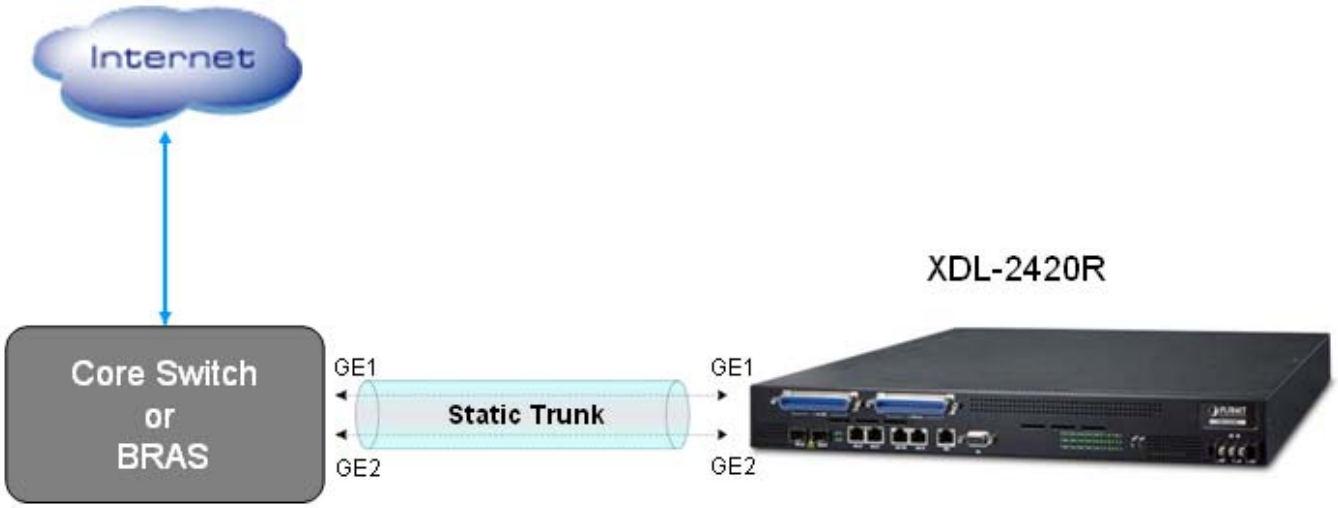


Figure 4-2-9: Uplink Application Mode of Aggregation

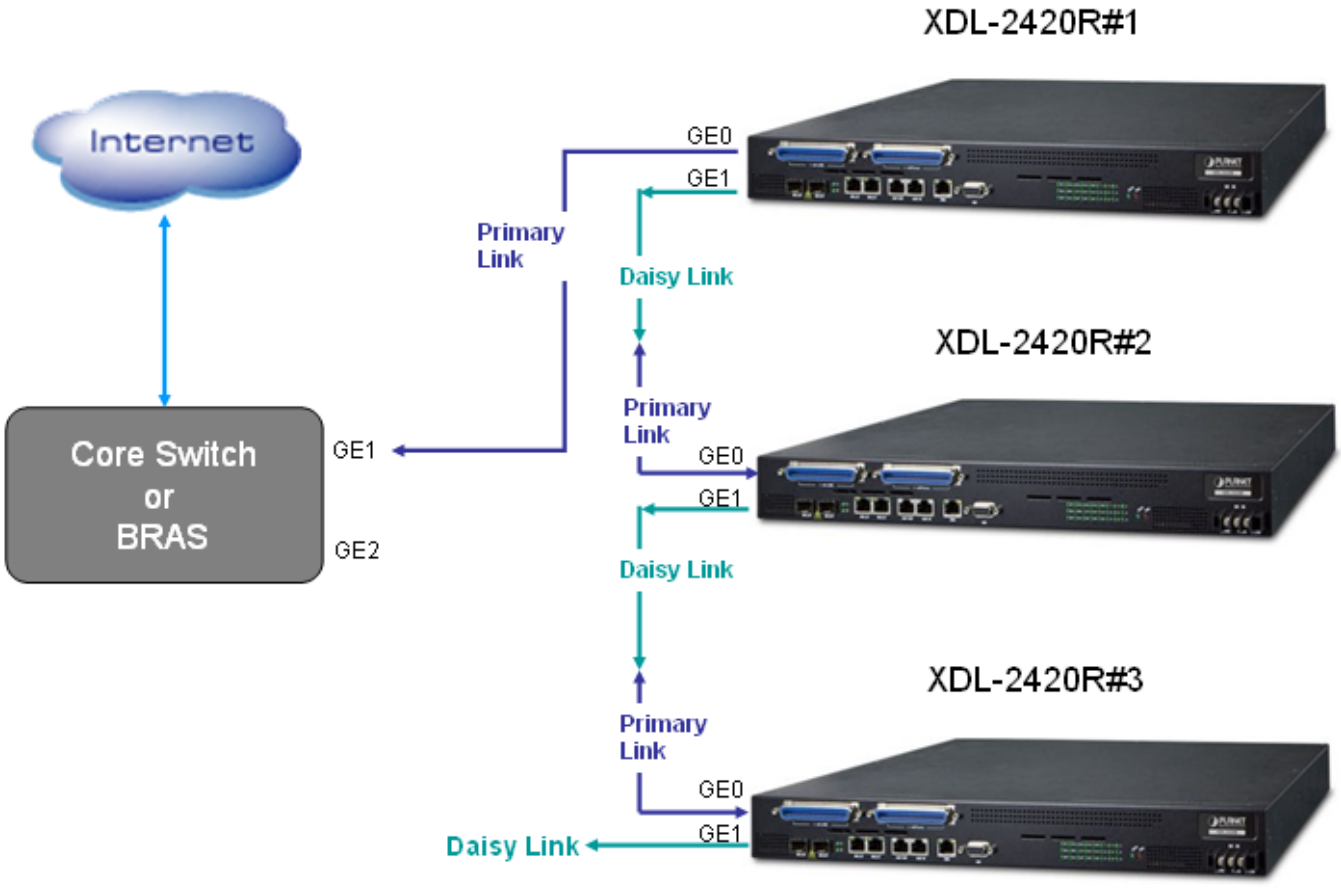


Figure 4-2-10: Uplink Application Mode of Daisy

4.2.8 Access Control List

This section introduces how to configure ACL group profile application to xDSL port. Before you apply new ACL profile to xDSL port, you have to create a new ACL profile from Access Control List Group page as default setting is ACL-DEFAULT. When you create a new ACL profile, you can find a new profile is going to appear under ACL Group option, and then you can select it to apply the port to whatever you want. The screen in Figure 4-2-11 appears.

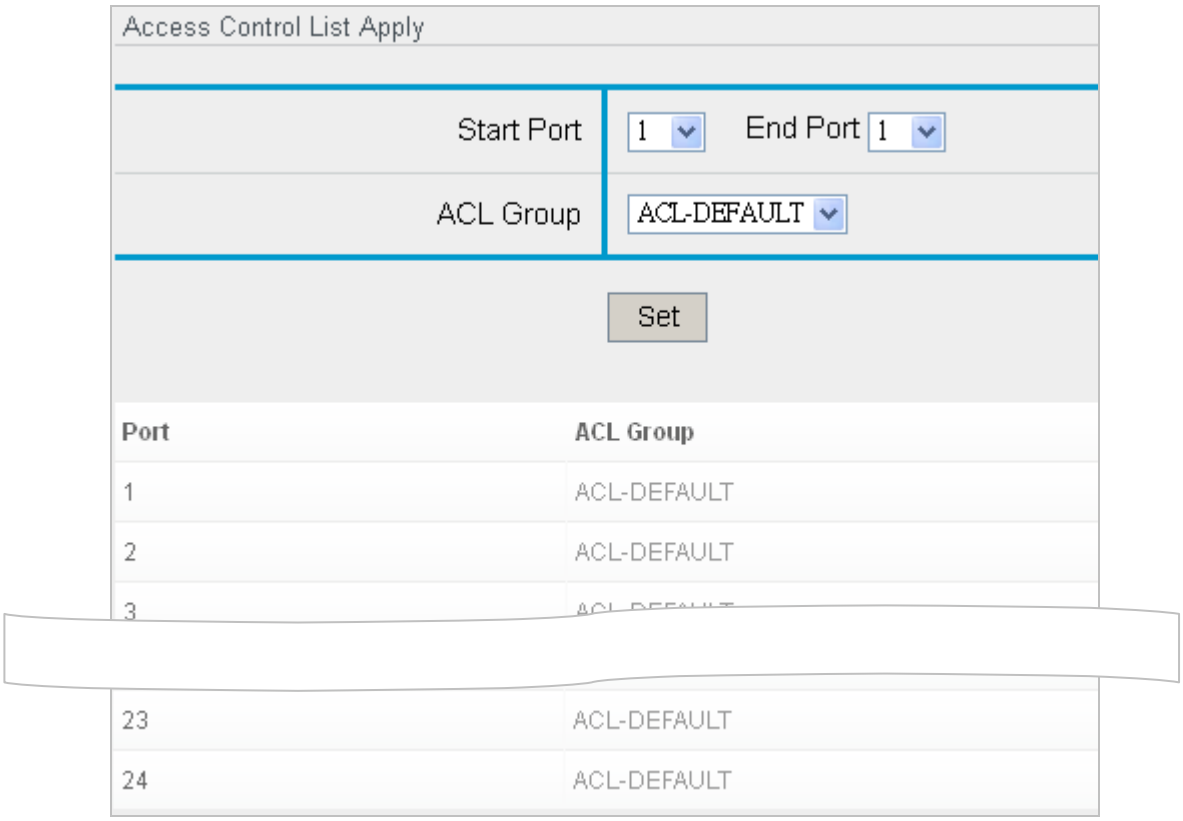


Figure 4-2-11: Access Control List Page Screenshot

The Page includes the following fields:

Object	Description
• **Start Port**	Allows user to set up port range.
• **End Port**	Allows user to set up port range.
• **ACL Group**	Allows user to select an ACL group for applying to xDSL port. New ACL profile has to be created from Access Control List Group page first and then you will see new profile appear.

Button

Set: Save configuration.

4.2.9 QoS Configuration

This section introduces how to configure QoS and apply to xDSL port. QoS configuration status is shown on the same page, Please rotate your web page to the bottom. The screen in Figure 4-2-12 appears.

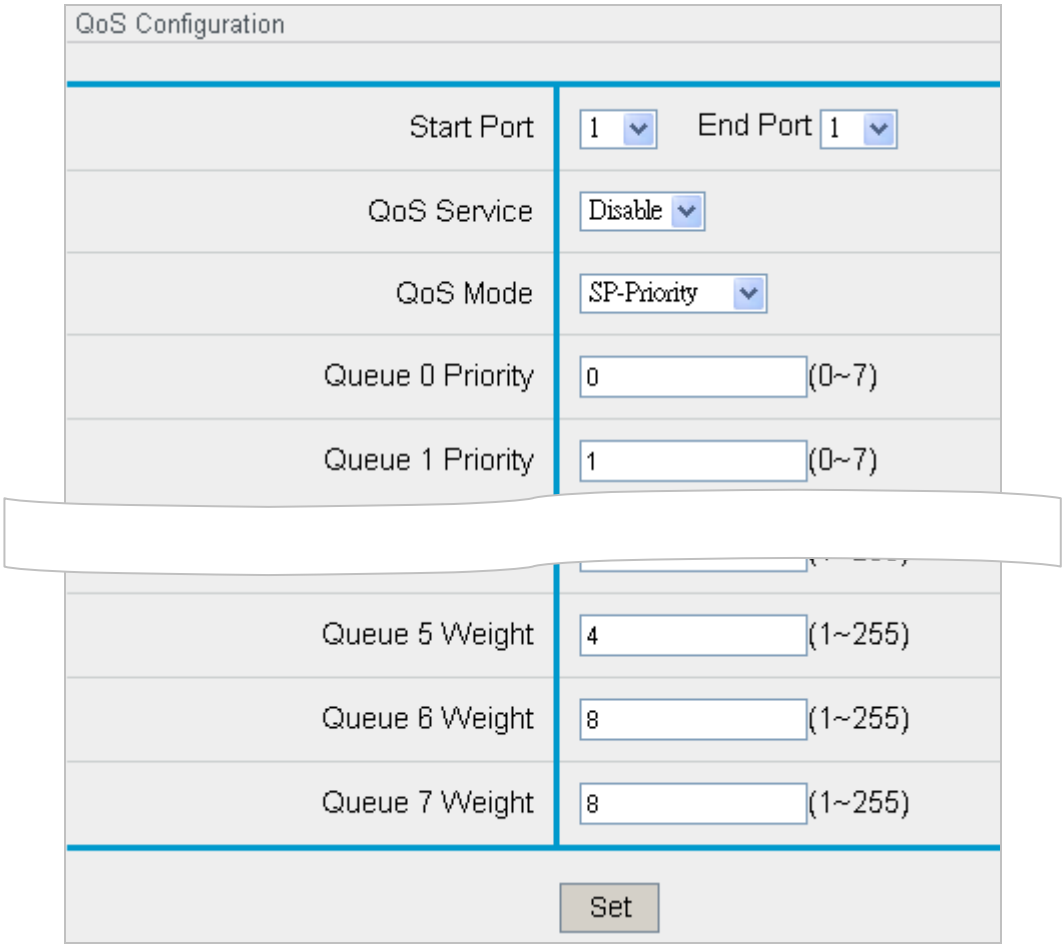


Figure 4-2-12: QoS Configuration Page Screenshot

The page includes the following fields:

Object	Description
• **Start Port**	Allows user to set up port range.
• **End Port**	Allows user to set up port range.
• **QoS Service**	Allows user to enable or disable QoS service.
• **QoS Mode**	It offers two QoS modes. **SP-Priority**: Strict Priority ensures service for high-priority traffic. The software assigns the maximum weights to each queue, causing the queuing mechanism to serve as many packets in one queue as possible before moving to a lower queue. This method is based on the queuing mechanism to favor the higher queues over the lower queues. **WRR-Weight**: Weighted Round Robin ensures that all queues are serviced during each

	cycle. A WRR algorithm is used to rotate service among the eight queues on the devices. The rotation is based on the weights you assign to each queue. This method rotates service among the queues, forwarding a specific number of packets in one queue before moving on to the next one.
• **Queue 0-7 Priority**	Queue 0-7 Priority options are for SP-Priority mode.
• **Queue 0-7 Weight**	Queue 0-7 Weight options are for WRR-Weight mode.

Button

Set: Save configuration.

4.2.10 IGMP Configuration

This section introduces how to configure IGMP. The XDL-2420R supports IGMP v2 snooping only, so please make sure your multicast source and the other network devices both support IGMP version2. Please note that XDL-2420R doesn't support IGMP Querier feature, so user must use it to co-work a switch that supported IGMPv2 Querier feature. The screen in Figure 4-2-13 appears.

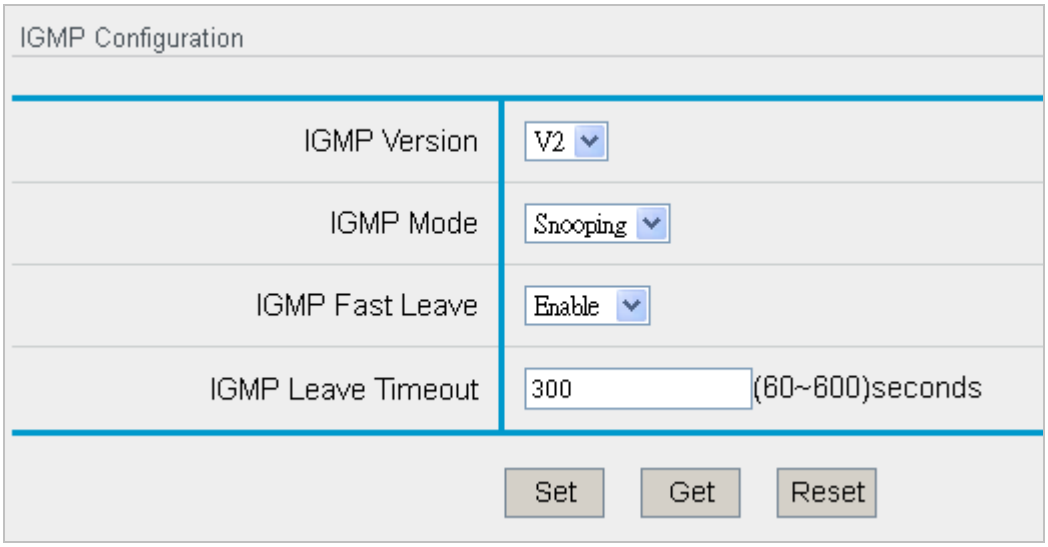


Figure 4-2-13: IGMP Configuration Page Screenshot

The page includes the following fields:

Object	Description
• **IGMP Version**	The XDL-2420R supports IGMP version2 only.
• **IGMP Mode**	IGMP Snooping mode is enabled always.

• **IGMP Fast Leave**	Allows user to disable or enable IGMP fast leave mode for leaving multicast stream immediately or leaving multicast stream according to IGMP Leave Timeout configuration.
• **IGMP Leave Timeout**	Allows user to set IGMP leave time out as default is 300 seconds.

Button

Set: Save configuration.

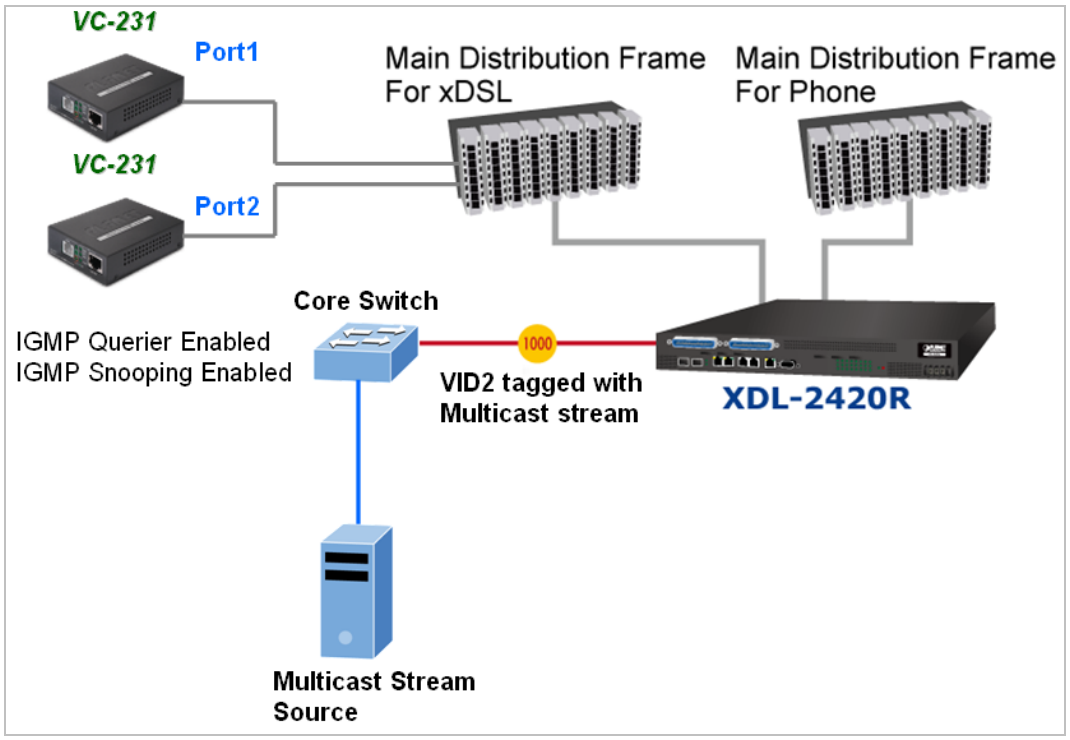
Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

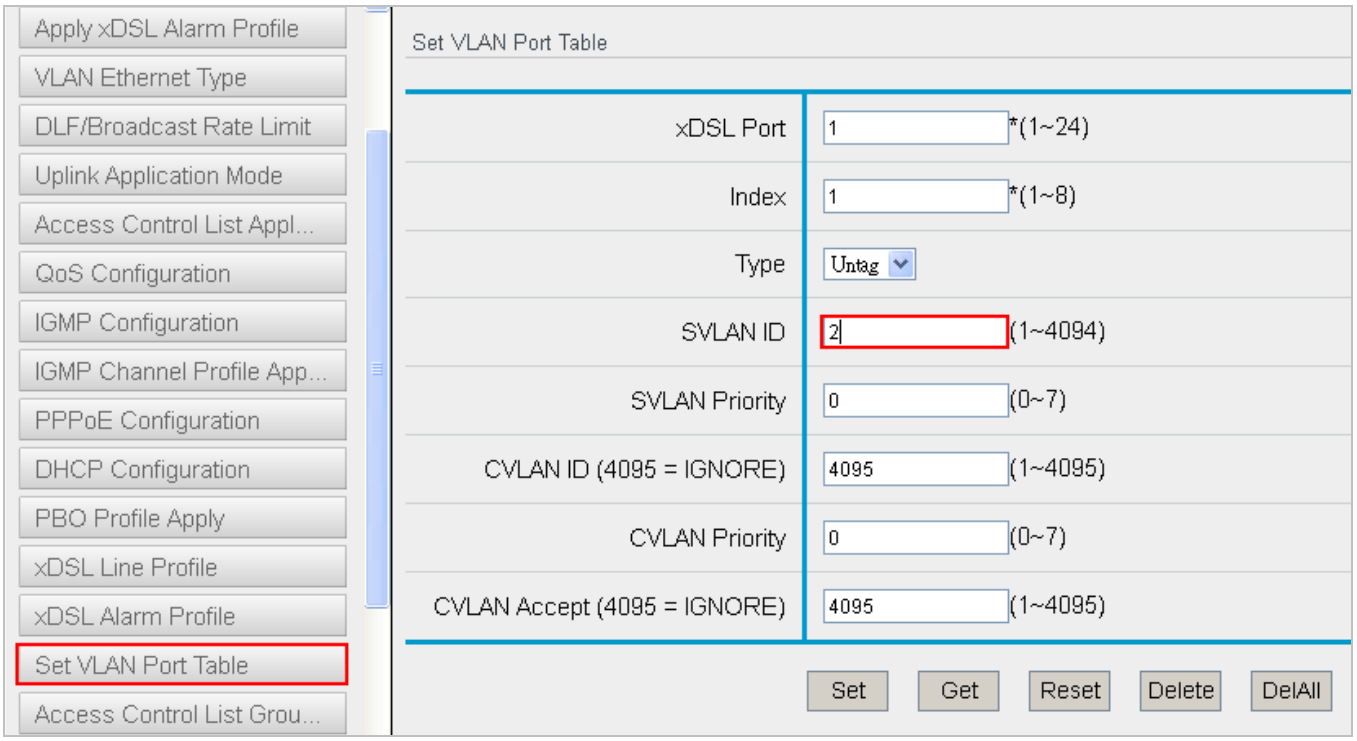
Please make sure that when multicast stream input to GE#1 and GE#2 ports, it should be tagged VID then IGMP Snooping is going to control the multicast stream and to avoid it flooding to CPE side. Also XDL-2420R should be enabled VLAN feature. For example, two VC-231 CPE devices want to access the multicast stream from the multicast stream source and we won't multicast stream flooding to the other port.

We leave IGMP Snooping, IGMP Channel Profile Apply and IGMP Channel Profile configuration to default, but we have to set up VLAN to port1 and port2. The configuration example is as following. You can check IGMP group table and IGMP Snooping table from "Static" option in menu tree.

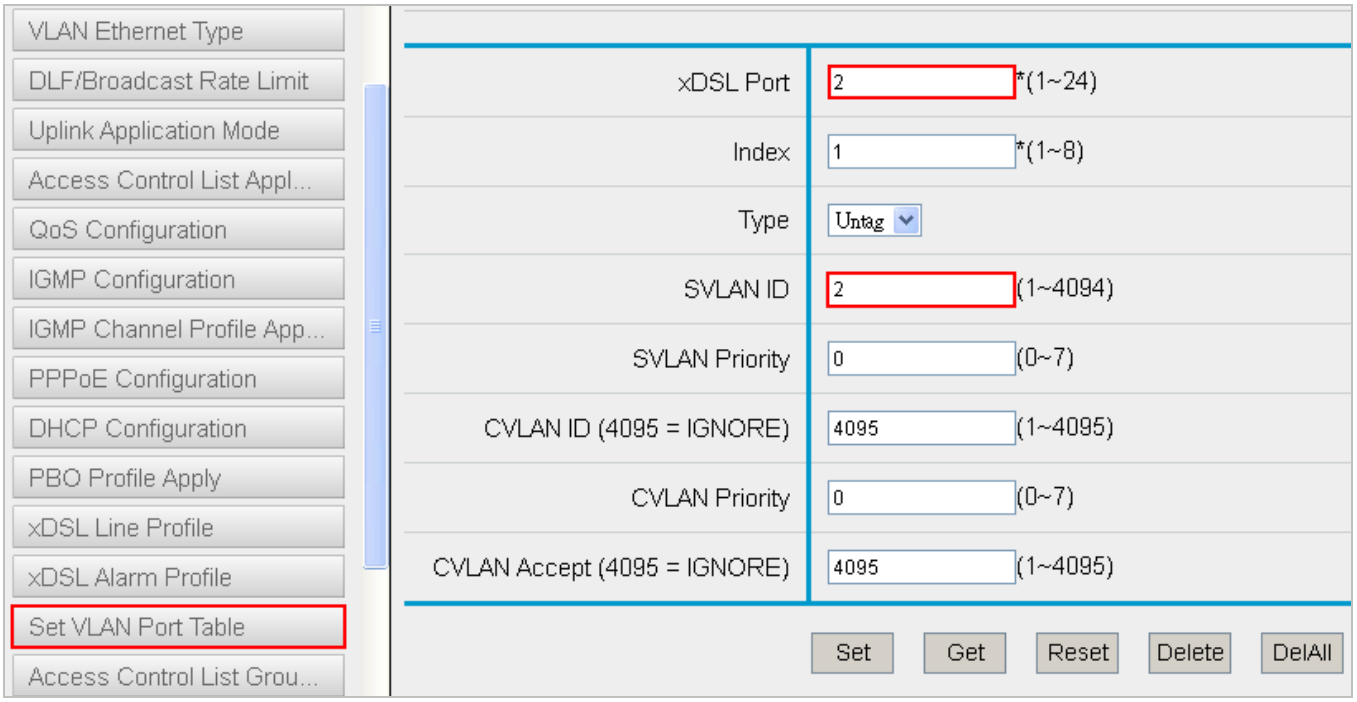
[Topology]



[Port1 VLAN Configuration]



[Port2 VLAN Configuration]



4.2.11 IGMP Channel Profile

This section introduces how to configure IGMP channel profile and apply to xDSL port. Before you apply the new IGMP channel profile, you have to create a new IGMP channel profile from the IGMP Channel Profile page. The screen in Figure 4-2-14 appears.

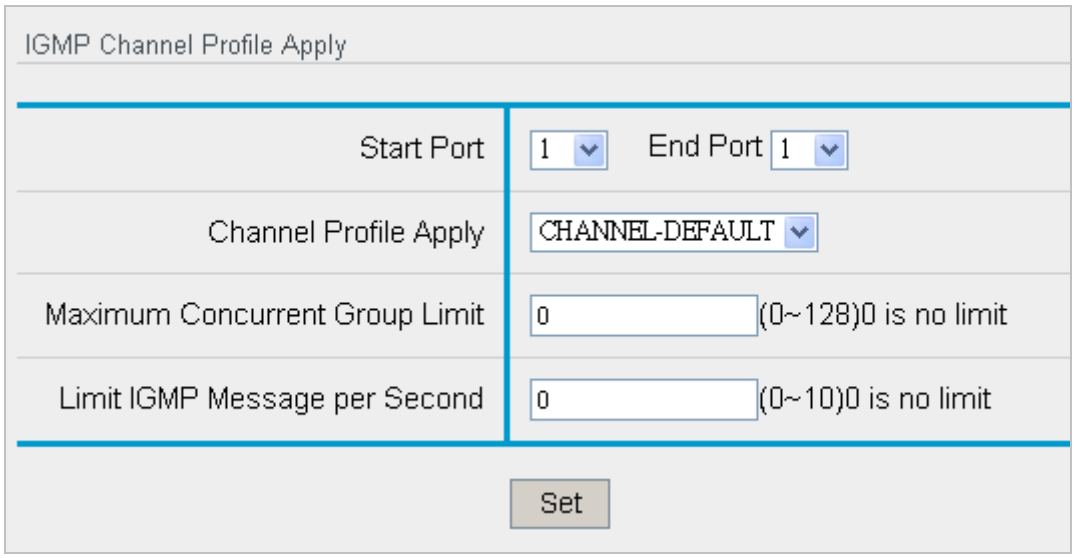


Figure 4-2-14: IGMP Channel Profile Page Screenshot

The Page includes the following fields:

Object	Description
• **Start Port**	Allows user to set up port range.
• **End Port**	Allows user to set up port range.
• **Channel Profile Application**	Allows user to select new IGMP channel profile and apply to xDSL port. Default setting is CHANNEL-DEFAULT. Please note that you have to create a new profile from IGMP Channel Profile page first and then you can select the created profile from this option.
• **Maximum Concurrent Group Limit**	Allows user to set up concurrent group limitation. Range: 0-128, 0 is no limit. 128 is the maximum.
• **Limit IGMP Message per Second**	Allows user to limit IGMP message issuing per second. Range: 0-10, 0 is no limit.

4.2.12 PPPoE Configuration

This section introduces how to configure PPPoE configuration. The screen in Figure 4-2-15 appears.

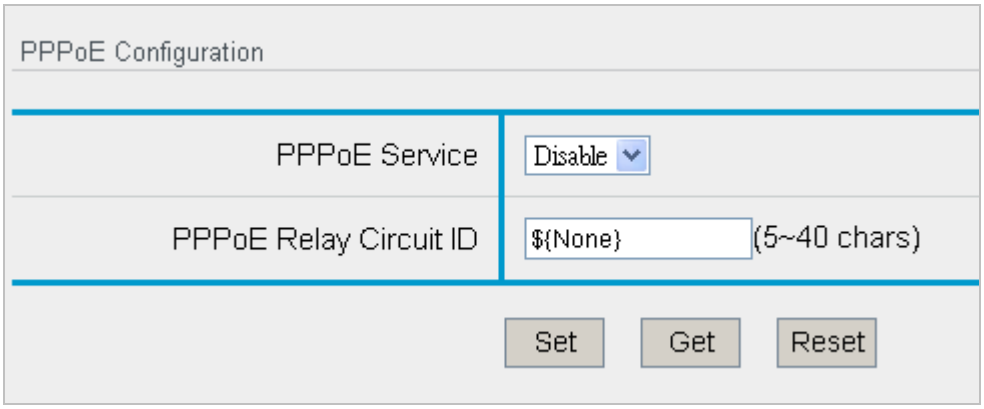


Figure 4-2-15: PPPoE Configuration Page Screenshot

The Page includes the following fields:

Object	Description
• **PPPoE Service**	Allows user to enable or disable PPPoE service.
• **PPPoE Relay Circuit ID**	It specifies unique ID to distinguish which devices that traffic comes from. Combination format: string- ${Line}:${Vid} (refer to Table 4-2-1). Acceptable signs include: “/”,”,”,”**:** “,”\” and so on. **Default: Null**

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

Input Variance	Description	Remarks
Characters	String	Length: 255 characters
${Line}	Line	Display Channel (1~N)
${Vid}	VLAN ID of the bridge port	VLAN ID (Default VID would be applied if no VLAN ID has been set.)

Table 4-2-1: PPPoE Variance

4.2.13 DHCP Configuration

This section introduces how to configure DHCP option82 configuration. The XDL-2420R is going to insert specific option82 information into a DHCP discover packet when a DHCP request goes through the XDL-2420R and forwards to DHCP server.

The DHCP option82 message will be removed when IP address is allocated and is transferred to DHCP client. Please note that DHCP server also needs to support DHCP option82 feature and user has to set up DHCP option 82 policies to DHCP server to allocate IP address according to the option82 policy. The screen in Figure 4-2-16 appears.

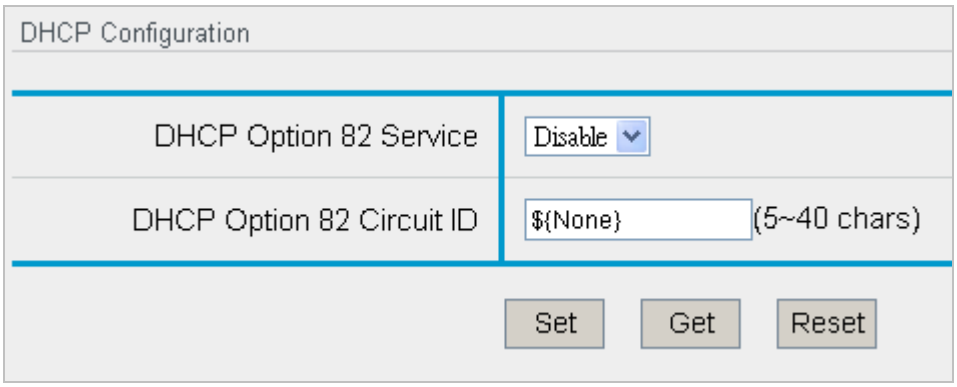


Figure 4-2-16: DHCP Configuration Page Screenshot

The page includes the following fields:

Object	Description
• **DHCP Option 82 Service**	Allows user to enable or disable DHCP Option82 service.
• **DHCP Option82 Circuit ID**	It specifies unique ID to distinguish which devices that traffic comes from. Combination format: string- ${Line}:${Vid} (refer to Table 4-2-2). Acceptable signs include: "/","**,**","**:** ","\" and so on. **Default: Null**

Button

Set: Save configuration.

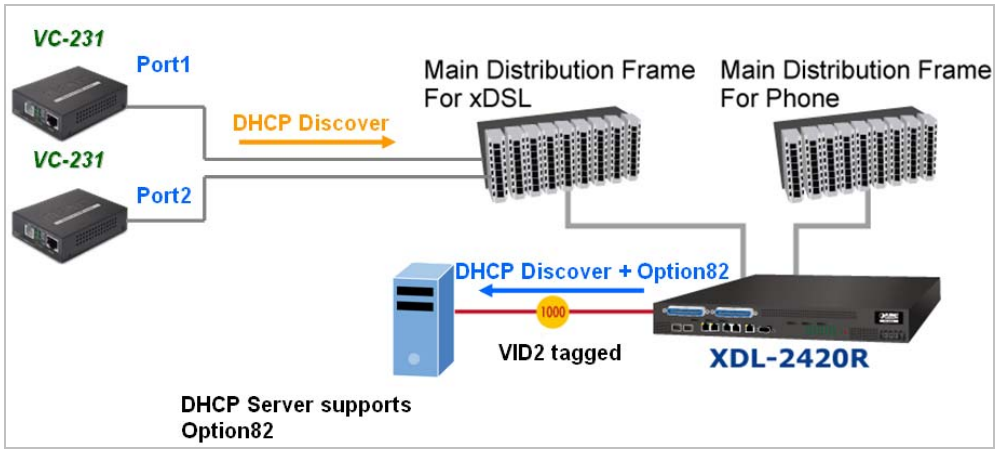
Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

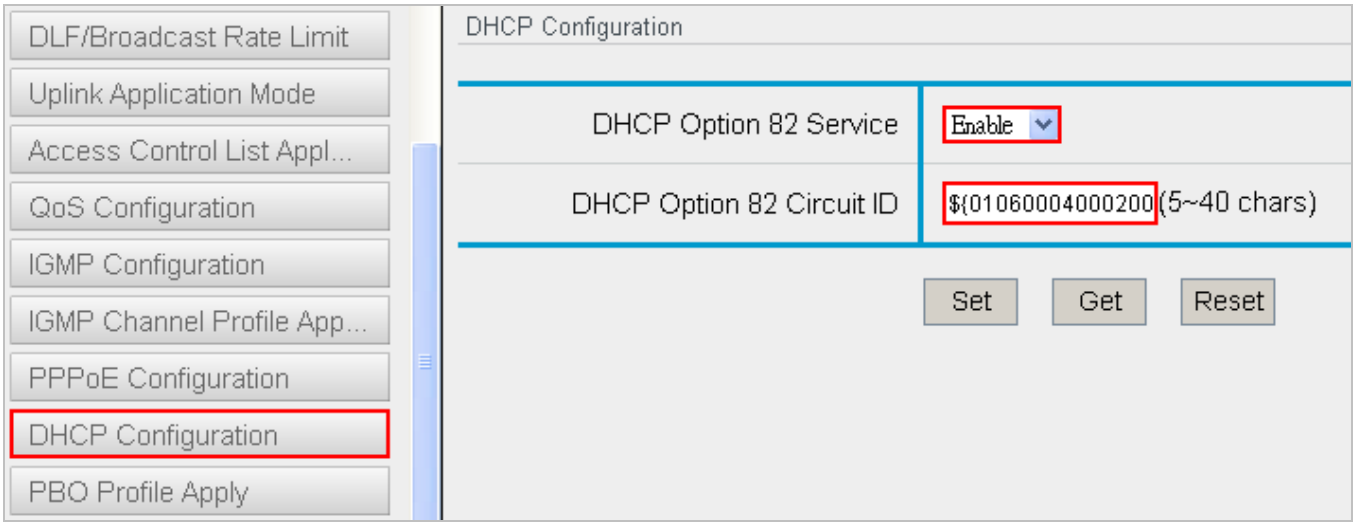
Input Variance	Description	Remarks
Characters	String	Length: 255 characters
${Line}	Line	Display Channel (1~N)
${VPI}	VPI	0~4095
${VCI}	VCI	1~65535

${Vid}	VLAN ID of the bridge port	VLAN ID (Default VID would be applied if no VLAN ID has been set.)

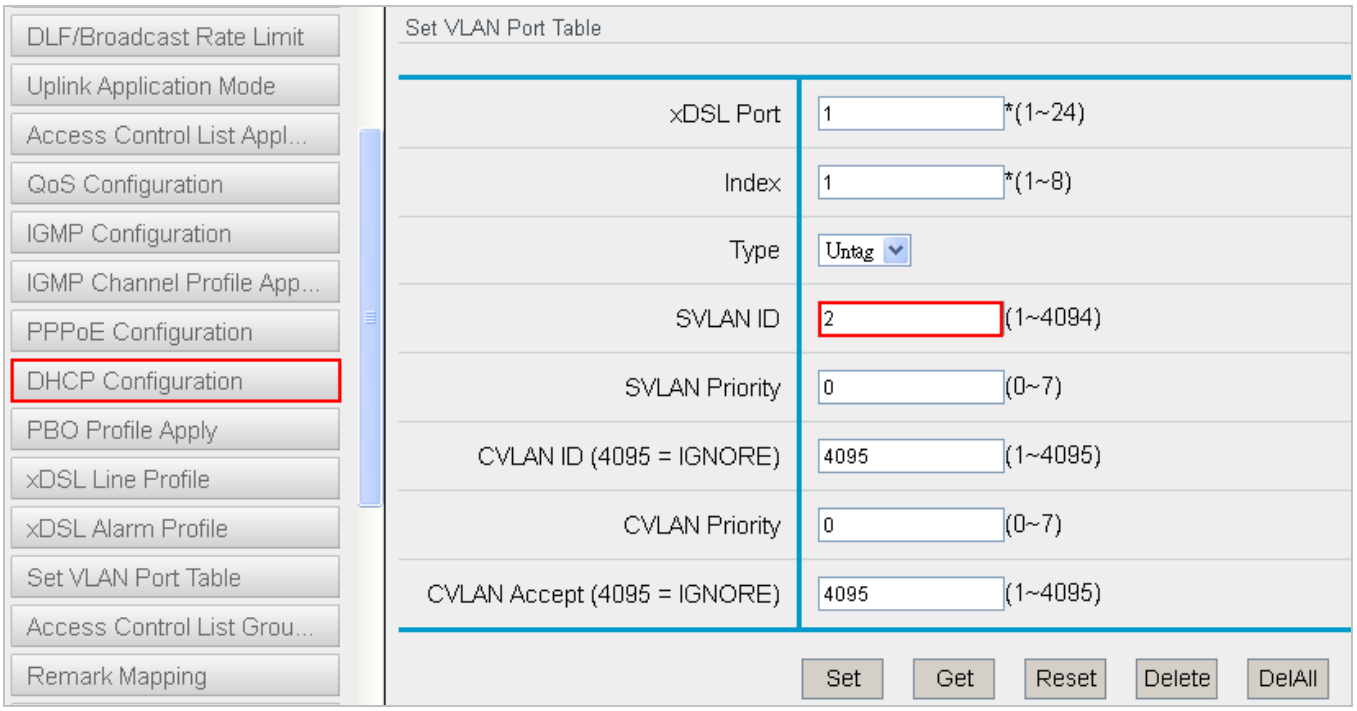
This feature must co-worked with VLAN then the option82 message will be attached to DHCP discover packet and output from XDL-2420R.



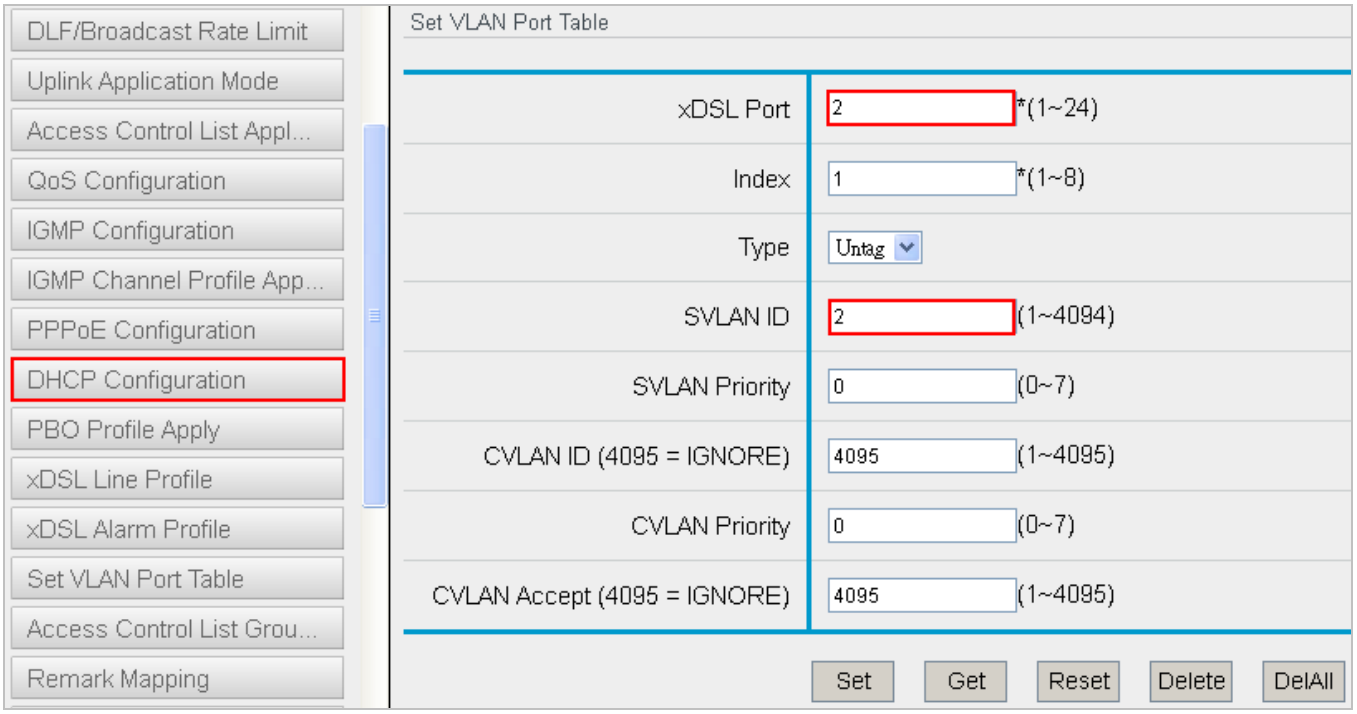
[DHCP Configuration Example]



[Port1 Configuration Example]



[Port2 Configuration Example]



4.2.14 xDSL Line Profile

This section introduces how to configure xDSL Line Profile. **xDSL Line Profile** contains parameters for configuring VDSL and ADSL lines. As a managed node can handle a large number of CPE, (e.g., hundreds or perhaps thousands of lines), provisioning every parameter on every CPE may become burdensome. A profile is a set of parameters that can be shared by multiple lines using the same configuration.

One or more lines may be configured to share parameters of a single profile by setting their vdslLineConfProfile objects to the value of this profile. If a change is made to the profile, all lines that refer to it will be reconfigured to the changed parameters. Before a profile can be deleted or taken out of service it must be first unreferenced from all associated lines.

Implementations MUST provide a default profile with an index value of 'DEFVAL' for each profile type. Before a line's profiles have been set, these profiles will be automatically used by default profile. This default profile name, 'DEFVAL', is considered reserved in the context of profiles defined in system.

Profile changes MUST take effect immediately. These changes MAY result in a restart (hard reset or soft restart) of the units on the line.
The screen in Figure 4-2-17 appears.

xDSL Line Profile

List Profile	LINE-DEFAULT
Profile Name	LINE-DEFAULT *(1~40 chars)
[VDSL] Transmode	G.993.2 Annex B
[VDSL] Profile	17a
[VDSL] Annex A Band Plans	BP DS D32
[VDSL] Annex B Band Plans	BP B8-12 998ADE17-M2x-B
[VDSL] Annex C Band Plans	POTS-138B
[ADSL] Transmode	Auto
[Dnstream] Max Rate (kbps)	200000 (32~200000)
[Dnstream] Min Rate (kbps)	32 (32~200000)
[Dnstream] Msg Rate (kbps)	16 (4~248)
[Dnstream] Max SNRM (0.1dB)	310 (60~310)
[Dnstream] Min SNRM (0.1dB)	0 (0~60)
[Dnstream] Target SNRM (0.1dB)	80 (0~310)
[Dnstream] Max Interleave Delay (ms)	4 (0~63)
[Dnstream] Min INP	0.5 symbol
[Dnstream] Min INP8	No INP8
[Upstream] Max Rate (kbps)	200000 (32~200000)
[Upstream] Min Rate (kbps)	32 (32~200000)

[Upstream] Msg Rate (kbps)	16 (4~248)
[Dnstream] Max SNRM (0.1dB)	310 (60~310)
[Dnstream] Min SNRM (0.1dB)	0 (0~60)
[Dnstream] Target SNRM (0.1dB)	80 (0~310)
[Dnstream] Max Interleave Delay (ms)	4 (0~63)
[Dnstream] Min INP	0.5 symbol
[Dnstream] Min INP8	No INP8
[Upstream] Max Rate (kbps)	200000 (32~200000)
[Upstream] Min Rate (kbps)	32 (32~200000)
[Upstream] Msg Rate (kbps)	16 (4~248)
[Upstream] Max SNRM (0.1dB)	310 (60~310)
[Upstream] Min SNRM (0.1dB)	0 (0~60)
[Dnstream] Target SNRM (0.1dB)	80 (0~310)
[Dnstream] Max Interleave Delay (ms)	4 (0~63)
[Dnstream] Min INP	0.5 symbol
[Dnstream] Min INP8	No INP8
[Upstream] Max Rate (kbps)	200000 (32~200000)
[Upstream] Min Rate (kbps)	32 (32~200000)
[Upstream] Msg Rate (kbps)	16 (4~248)
[Upstream] Max SNRM (0.1dB)	310 (60~310)

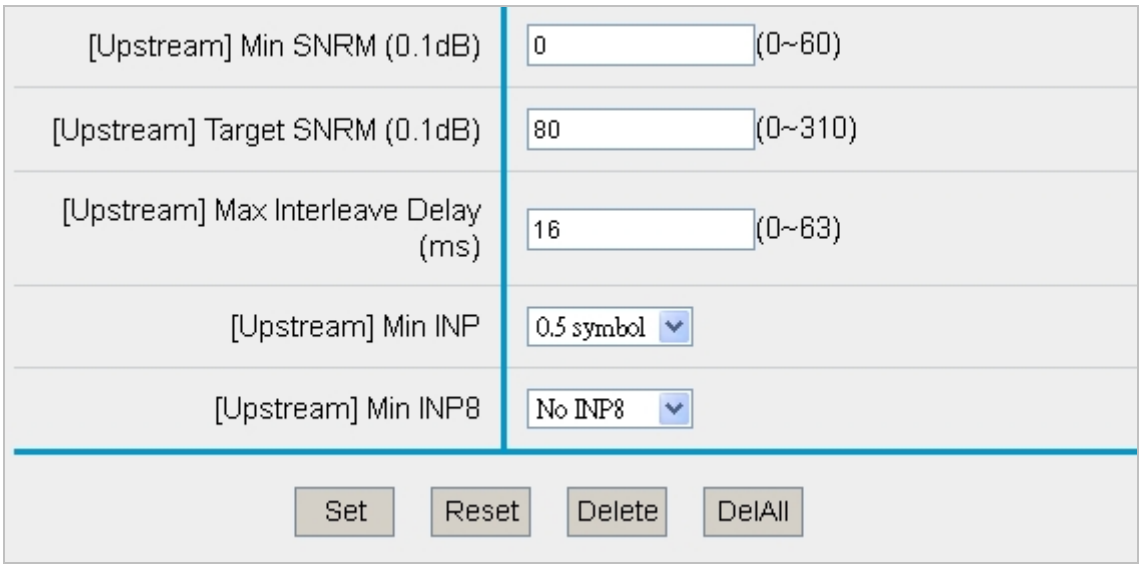


Figure 4-2-17: xDSL Line Profile Page Screenshot

The page includes the following fields:

Object	Description
• **List Profile**	xDSL profile name selection. If you want to add a new xDSL profile, please click the drop-down list and select "Add New" option to change profile and and keep the profile configuration, after pressing the "Set" button. A new profile name will be shown on the profile list.
• **Profile Name**	Allows user to change profile name for adding a new xDSL profile. (1-40 characters)
• **[VDSL] Transmode**	There are 3 VDSL transaction modes: Annex A, Annex B and Annex C.
• **[VDSL] Profile**	Supports "Auto, 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a", "8a 8b 8c 8d" and "12a 12b" profiles. **Default**: 17a.
• **[VDSL] Annex A Band Plans**	Supports "BP DS D32", "BP DS D48", "BP DS D64", "BP DS D128". **Default**: "BP DS D32".
• **[VDSL] Annex B Band Plans**	Band plans are listed as follows. **Default:** 22 1. BP B7-1 997-M1c-A-7, 2. BP B7-2 997-M1x-M-8, 3. BP B7-3 997-M1x-M, 4. BP B7-4 997-M2x-M-8, 5. BP B7-5 997-M2x-A 6. BP B7-6 997-M2x-M, 7. BP B7-7 HPE17-M1-NUS0, 8. BP B7-8 HPE30-M1-NUS0, 9. BP B7-9 997E17-M2x-A, 10. BP B7-10 997E30-M2x-NUS0, 11. BP B8-1 998-M1x-A, 12. BP B8-2 998-M1x-B, 13. BP B8-3 998-M1x-NUS0, 14. BP B8-4 998-M2x-A 15. BP B8-5 998-M2x-M 16. BP B8-6 998-M2x-B 17. BP B8-7 998-M2x-NUS0 18. BP B8-8 998E17-M2x 19. BP B8-9 998E17-M2x-NUS0-M

	20. BP B8-10 998ADE17-M2x-NUS0-M 21. BP B8-11 998ADE17-M2x-A 22. BP B8-12 998ADE17-M2x-B 23. BP B8-13 998E30-M2x-NUS0 24. BP B8-14 998E30-M2x-NUS0-M 25. BP B8-15 998ADE30-M2x-NUS0-M 26. BP B8-16 998ADE30-M2x-NUS0-A
• **[VDSL] Annex C Band Plans**	POTS-138B, POTS-276B, POTS-138CO, TCM-ISDN **Default**: POTS-138B
• **[ADSL] Transmode**	**ADSL transaction modes are listed as follows. Default:** 1 1. Auto 2. G.992.1 Annex A 3. G.992.1 Annex B 4. G.992.3 Annex A 5. G.992.3 Annex B 6. G.992.3 Annex L Mode 1 7. G.992.3 Annex L Mode 2 8. G.992.3 Annex M 9. G.992.5 Annex A 10. G.992.5 Annex B 11. G.992.5 Annex M 12. G.992.1 G.992.3 G.992.5 Annex A 13. G.992.1 G.992.3 G.992.5 Annex B 14. G.992.3 G.992.5 Annex M 15. G.992.3 G.992.5 Annex A Annex M
• **[Dnstream] Max Rate (kbps)**	Allows user to configure downstream maximum rate from 32 to 200000. **Default**: 20000
• **[Dnstream] Min Rate (kbps)**	Allows user to configure downstream minimum rate from 32 to 200000. **Default**: 32
• **[Dnstream] Msg Rate (kbps)**	Allows user to configure downstream rate from 4 or 248 kbps. **Default**: 16.
• **[Dnstream] Max SNRM (0.1dB)**	Allows user to configure downstream SNR margin maximum from 60 to 310. **Default**: 310dB
• **[Dnstream] Min SNRM (0.1dB)**	Allows user to configure downstream SNR margin minimum from 0 to 60. **Default**: 0dB
• **[Dnstream] Target SNRM (0.1dB)**	Allows user to configure downstream target SNR margin from 0 to 310. Configured acceptable SNR margin. If the SNR margin is above this value, the CO should attempt to reduce its power output to optimize its operation. **Default**: 80dB
• **[Dnstream] Max Interleave Delay (ms)**	Allows user to configure maximum downstream interleave delay from 0 to 63ms. Interleave Delay defines the mapping (relative spacing) between subsequent input bytes at the interleave input and their placement in the bit stream at the interleave output.

	Default: 4ms
• **[Dnstream] Min INP**	Allows user to configure downstream minimum INP from 0.5 symbols to 16 symbols. (INP means impulse noise immunity) **Default**: 0.5 symbols.
• **[Dnstream] Min INP8**	Allows user to configure downstream minimum INP8 from 0.5 symbols to 16 symbols. **Default**: No INP8
• **[Upstream] Max Rate (kbps)**	Allows user to configure upstream maximum rate from 32 to 200000. **Default**: 20000
• **[Upstream] Min Rate (kbps)**	Allows user to configure upstream minimum rate from 32 to 200000. **Default**: 32
• **[Upstream] Msg rate (kbps)**	Allows user to configure upstream rate from 4 or 248 kbps. **Default**: 16.
• **[Upstream] Max SNRM (0.1dB)**	Allows user to configure upstream SNR margin maximum from 60 to 310. **Default**: 310dB
• **[Upstream] Min SNRM (0.1dB)**	Allows user to configure upstream SNR margin minimum from 0 to 60. **Default**: 0dB
• **[Upstream] Target SNRM (0.1dB)**	Allows user to configure upstream target SNR margin from 0 to 310. Configured acceptable SNR margin. If the SNR margin is above this value, the CO should attempt to reduce its power output to optimize its operation. **Default**: 80dB
• **[Upstream] Max Interleave Delay (ms)**	Allows user to configure maximum upstream interleave delay from 0 to 63ms. Interleave Delay defines the mapping (relative spacing) between subsequent input bytes at the interleave input and their placement in the bit stream at the interleave output. **Default**: 16ms
• **[Upstream] Min INP**	Allows user to configure downstream minimum INP from 0.5 symbols to 16 symbols. (INP means impulse noise immunity) **Default**: 0.5 symbols.
• **[Upstream] Min INP8**	Allows user to configure downstream minimum INP8 from 0.5 symbols to 16 symbols. **Default**: No INP8

Button

: Save configuration.

: Click to reset IP address to default setting.

: Click to delete current xDSL profile.

: Click to delete all xDSL profiles.

4.2.15 xDSL Alarm Profile

This section introduces how to configure xDSL Alarm Profile. The XDL-2420R offers 15Min and 1 Day threshold for user setting flexibility. It means if this threshold value has been reached or exceeded within 15 minutes or 1 day, then it will alarm. This profile could be applied to **Apply xDSL Alarm Profile** configuration page. The screen in Figure 4-2-18 appears.

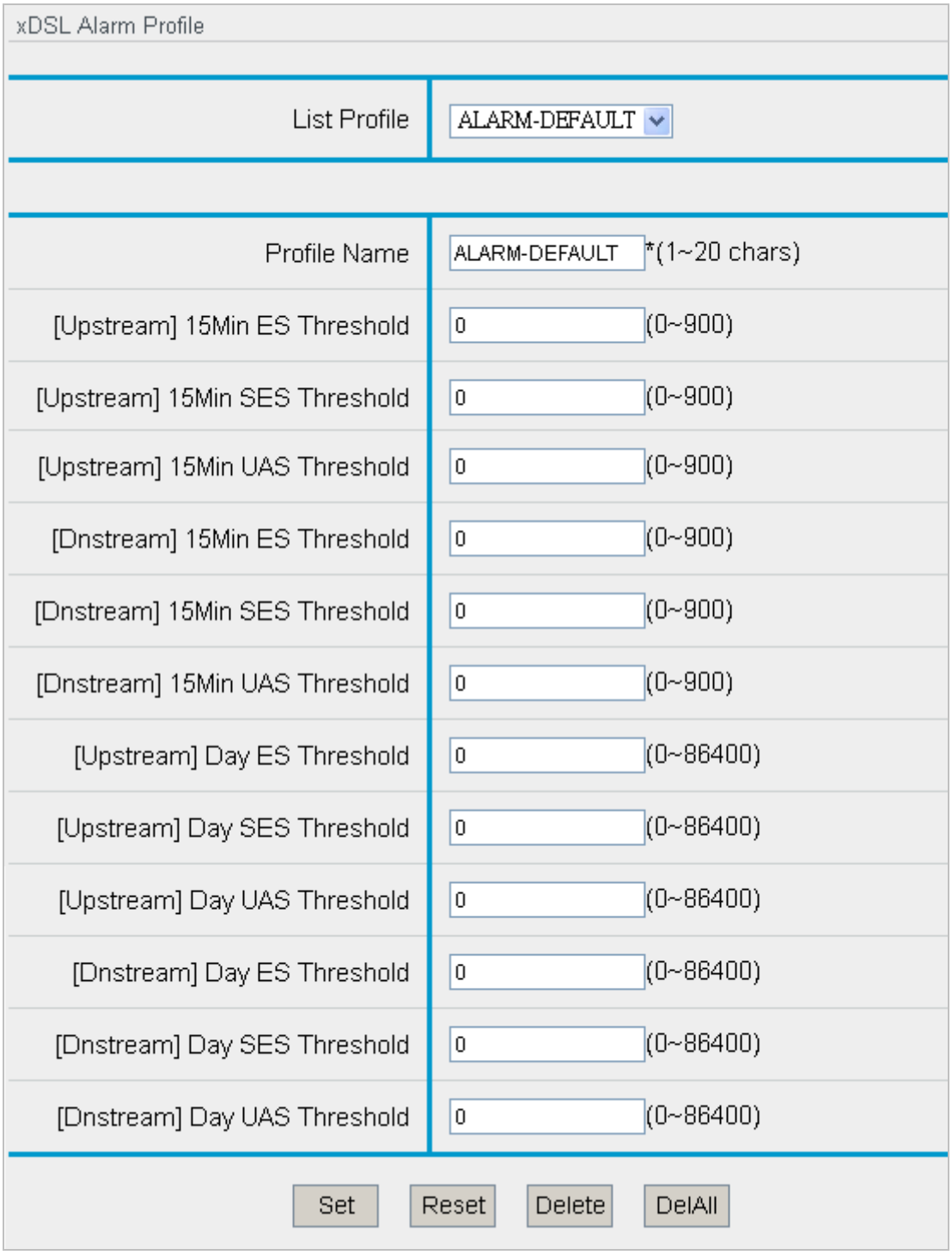


Figure 4-2-18: xDSL Alarm Profile Page Screenshot

The page includes the following fields:

Object	Description
• **List Profile**	xDSL alarm profile name selection. If you want to add a new xDSL profile, please click the drop-down list and select “Add New” option to change profile and keep the profile configuration, after pressing the “Set” button. A new profile name will be shown on the profile list.
• **Profile Name**	Allows user to change profile name for adding a new xDSL profile. (1-40 characters)
• **[Upstream] 15Min ES Threshold**	Allows user to configure the lowest limitation of 15 minutes upstream error seconds threshold.
• **[Upstream] 15Min SES Threshold**	Allows user to configure the lowest limitation of 15 minutes upstream severely error seconds threshold.
• **[Upstream] 15Min UAS Threshold**	Allows user to configure the lowest limitation of 15 minutes upstream unavailable error seconds threshold.
• **[Dnstream] 15Min ES Threshold**	Allows user to configure the lowest limitation of 15 minutes downstream severely error seconds threshold.
• **[Dnstream] 15Min SES Threshold**	Allows user to configure the lowest limitation of 15 minutes downstream unavailable error seconds threshold.
• **[Dnstream] 15Min UAS Threshold**	Allows user to configure the lowest limitation of 15 minutes downstream unavailable error seconds threshold.
• **[Upstream] Day ES Threshold**	Allows user to configure the lowest limitation of 1 day upstream error seconds threshold.
• **[Upstream] Day SES Threshold**	Allows user to configure the lowest limitation of 1 day upstream severely error seconds threshold.
• **[Upstream] Day UAS Threshold**	Allows user to configure the lowest limitation of 1 day upstream unavailable error seconds threshold.
• **[Dnstream] Day ES Threshold**	Allows user to configure the lowest limitation of 1 day downstream severely error seconds threshold.
• **[Dnstream] Day SES Threshold**	Allows user to configure the lowest limitation of 1 day downstream unavailable error seconds threshold.
• **[Dnstream] Day UAS Threshold**	Allows user to configure the lowest limitation of 1 day downstream unavailable error seconds threshold.

Button

Set: Save configuration.

Reset: Click to reset IP address to default setting.

Delete: Click to delete current xDSL profile.

DelAll: Click to delete all xDSL profiles.

4.2.16 Setting VLAN Port Table

This section introduces how to configure VLAN Port table and user can customize their VLAN application. The screen in Figure 4-2-19 appears.

The Set VLAN table is Q-in-Q VLAN concept**.**

IEEE 802.1Q Tunneling (Q-in-Q)

IEEE 802.1Q Tunneling (Q-in-Q) is designed for service providers carrying traffic for multiple customers across their networks. Q-in-Q tunneling is used to maintain customer-specific VLAN and Layer 2 protocol configurations even when different customers use the same internal VLAN IDs. This is accomplished by inserting **Service Provider VLAN (SPVLAN)** tags into the customer's frames when they enter the service provider's network, and then stripping the tags when the frames leave the network.

A service provider's customers may have specific requirements for their internal VLAN IDs and number of VLANs supported. VLAN ranges required by different customers in the same service-provider network might easily overlap, and traffic passing through the infrastructure might be mixed. Assigning a unique range of VLAN IDs to each customer would restrict customer configurations, require intensive processing of VLAN mapping tables, and could easily exceed the maximum VLAN limit of 4094.

The IP DSLAM supports multiple VLAN tags and can therefore be used in MAN applications as a provider bridge, aggregating traffic from numerous independent customer LANs into the **MAN (Metro Access Network)** space. One of the purposes of the provider bridge is to recognize and use VLAN tags so that the VLANs in the MAN space can be used independent of the customers' VLANs. This is accomplished by adding a VLAN tag with a MAN-related VID for frames entering the MAN. When leaving the MAN, the tag is stripped and the original VLAN tag with the customer-related VID is again available.

This provides a tunneling mechanism to connect remote costumer VLANs through a common MAN space without interfering with the VLAN tags. All tags use Ether Type **0x8100** or **0x88A8**, where 0x8100 is used for customer tags and 0x88A8 are used for service provider tags.

In cases where a given service VLAN only has two member ports on the IP DSLAM, the learning can be disabled for the particular VLAN and can therefore rely on flooding as the forwarding mechanism between the two ports. This way, the MAC table requirements is reduced.

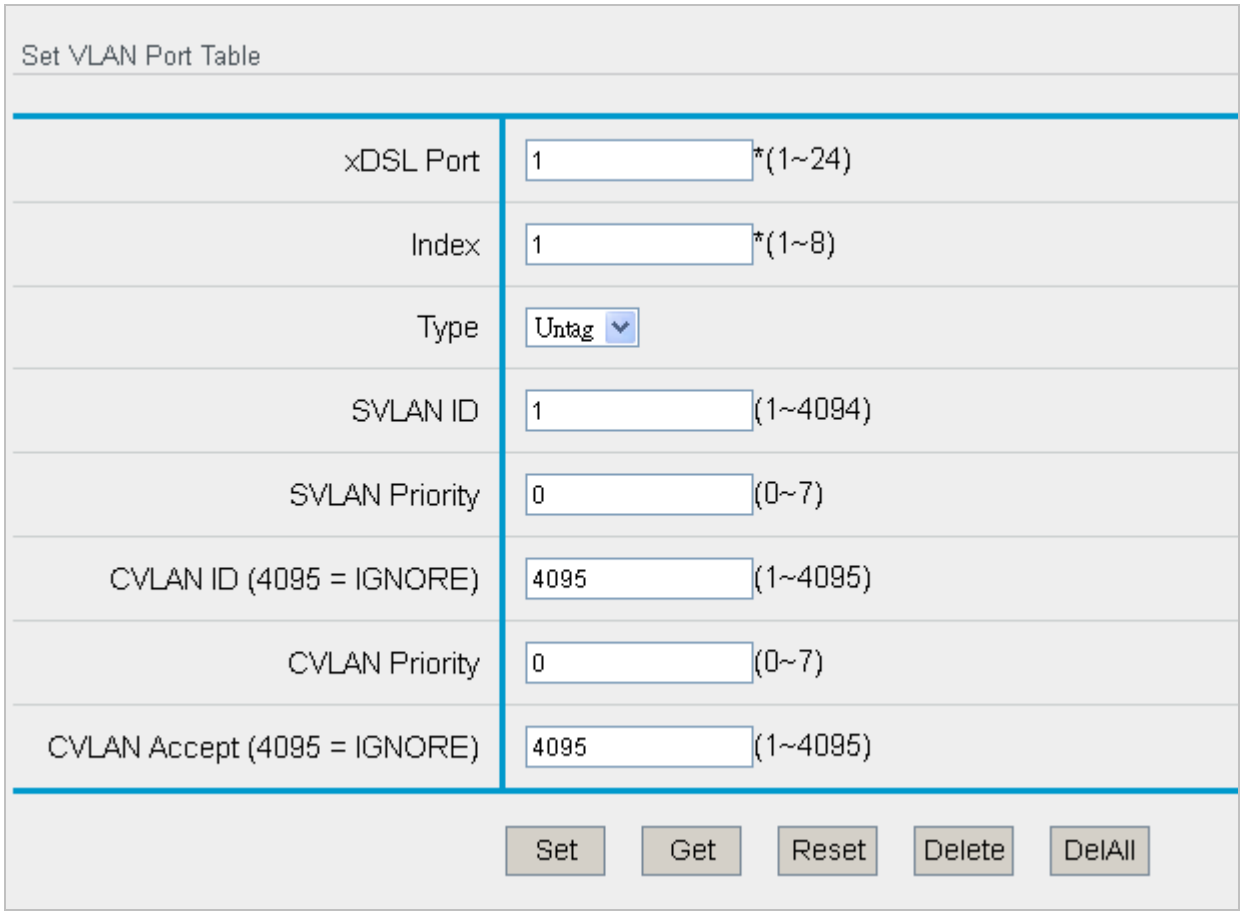


Figure 4-2-19: Set VLAN Port Table Page Screenshot

The page includes the following fields:

Object	Description
• **xDSL Port**	Allows user to indicate which xDSL port is going to configure VLAN tagged. **Default**: 1.
• **Index**	Allows user to set configuration index. It offers 8 indexes configuration totally. **Default**: 1.
• **Type**	Allows user to set tag or untag to ingress packet. This option is used for CVLAN. **Untag**: To deal with those packets without VID. Refer to following parameters about SVLAN/CVLAN ID. **Single**: To deal with those packets with specific VID (see CVLAN Accept parameter). Refer to the following parameters about SVLAN/CVLAN ID. **Default**: Untag
• **SVLAN ID**	Allows user to indicate a VID to be replaced to egress packet. **Default**: 1.
• **SVLAN Priority**	Allows user to indicate priority of SVLAN (Service VLAN) **Default**: 0

• **CVLAN ID (4095=IGNORE)**	Allows user to indicate a VID to be replaced to egress packet. **Default**: 4095.
• **CVLAN Priority**	Allows user to indicate priority of CVLAN (Customer VLAN) **Default**: 0
• **CVLAN Accept (4095=IGNORE)**	Allows user to indicate a VID to accept ingress packet of the same VID tagged.

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values. User has to input xDSL port and index number then the configuration could be gotten back. If you forgot the VLAN configuration, please telnet to this device and list VLAN table.

Reset: Click to reset IP address to default setting.

Delete: Click to delete current xDSL profile.

DelAll: Click to delete all xDSL profiles.

[VLAN Setting Example]

The following table shows four kinds of VLAN setting examples.

The configuration of No1 is 802.1Q tag-based VLAN application.

The configuration of No2 is Q-in-Q VLAN application.

The value of “Type” is used for CVLAN only.

The configuration of No3 is same as 802.1Q VLAN, but it just accepts VID10 tagged packet from CPE side.

The configuration of No4 is same as Q-in-Q VLAN, but it just accepts VID10 tagged packet from CPE side.

No.	VLAN Conditions	Type	SVLAN Setting	CVLAN Setting	CVLAN_ Accept	Ingress VID ①	Egress VID②	Figure
1	**Un-Tag in / Single-Tag out**	Untag	30	4095	4095	-	30	**802.1Q VLAN** Figure 4-2-20
2	**Un-Tag in / Double-Tag out**	Untag	30	50	4095	-	30,50	**Q-in-Q VLAN** Figure 4-2-21
3	**Single-Tag in / Single-Tag out**	Single	30	4095	10	10	30	Figure 4-2-22
4	**Single-Tag in / Double-Tag out**	Single	30	50	10	10	30,50	Figure 4-2-23

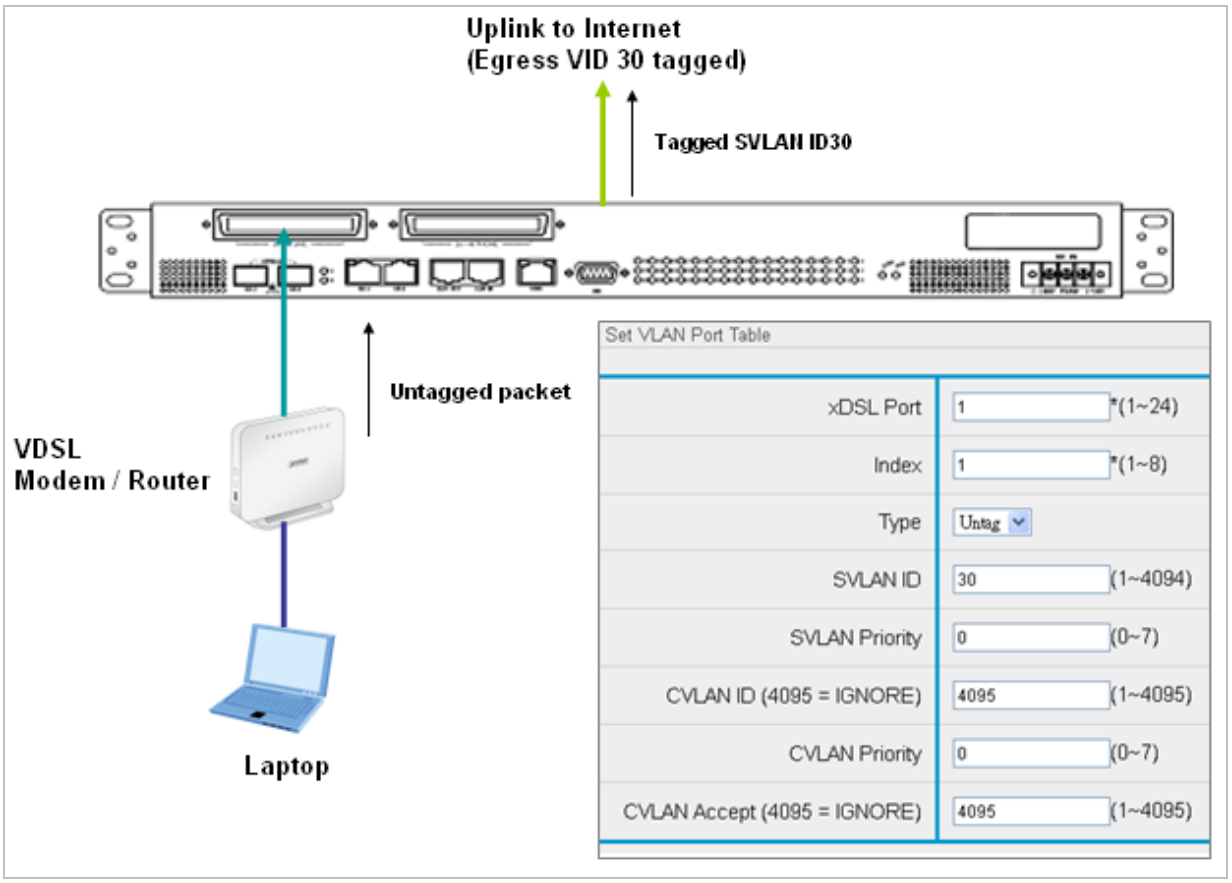


Figure 4-2-20: Example of setting Untagged packet in and Single Tagged packet out

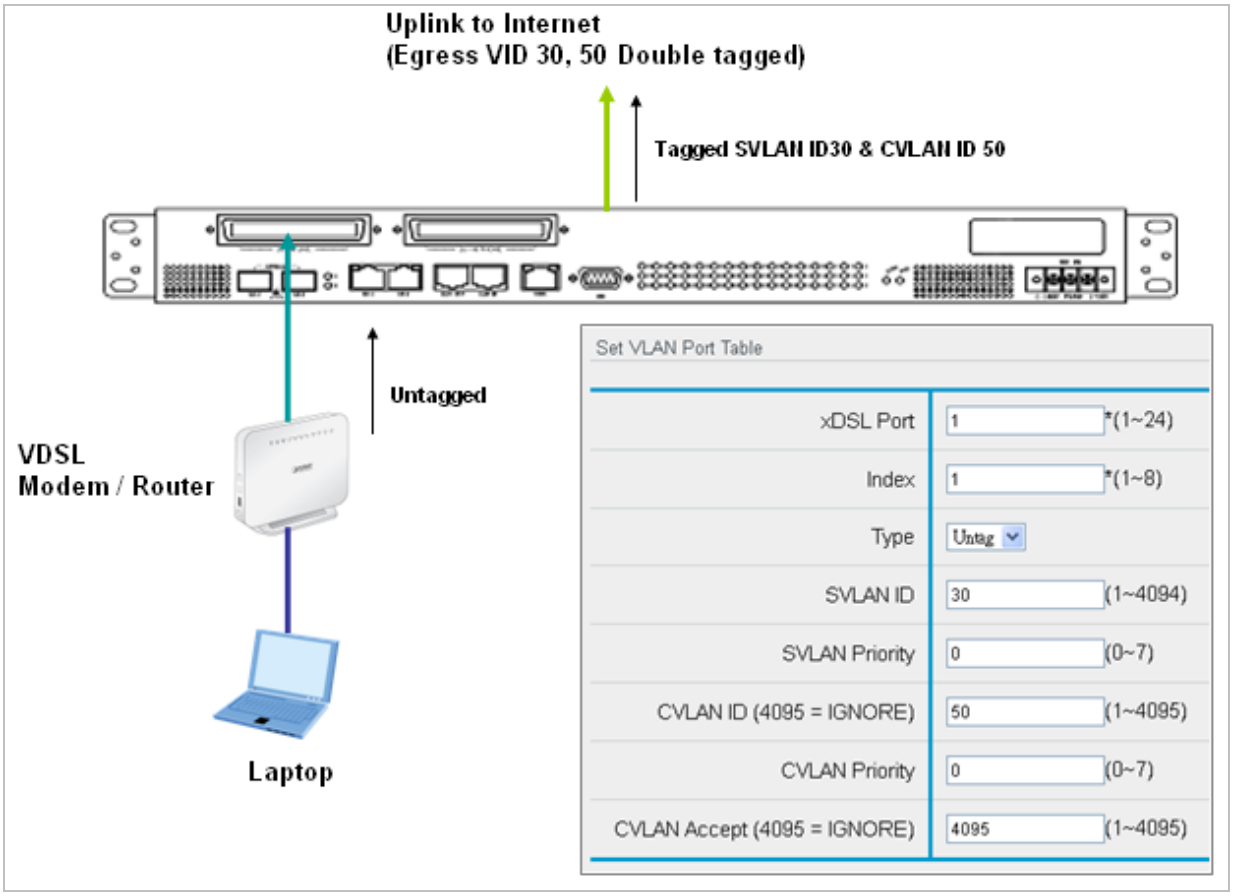


Figure 4-2-21: Example of setting Untagged packet in and Double Tagged packet out

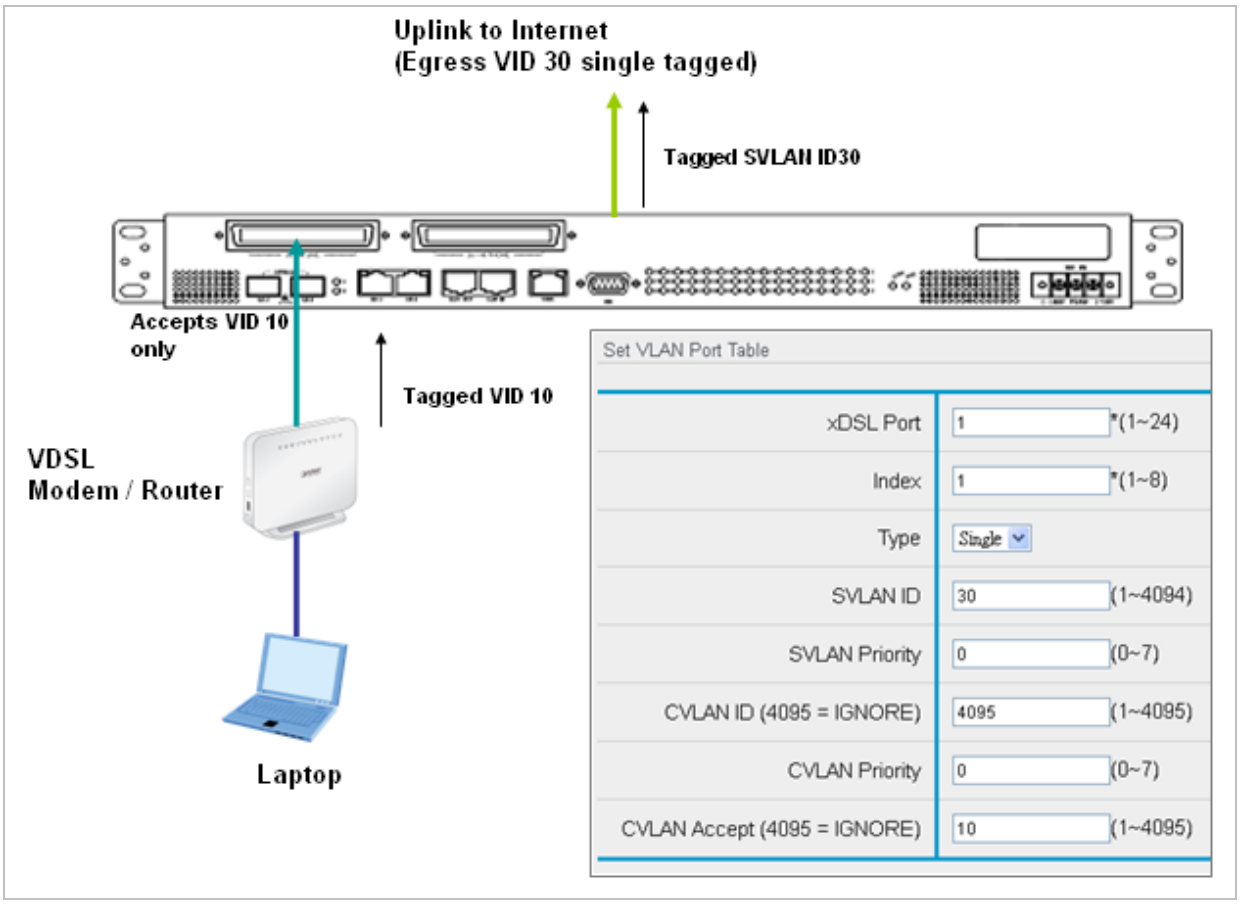


Figure 4-2-22: Example of setting Single Tagged packet in and Single Tagged packet out

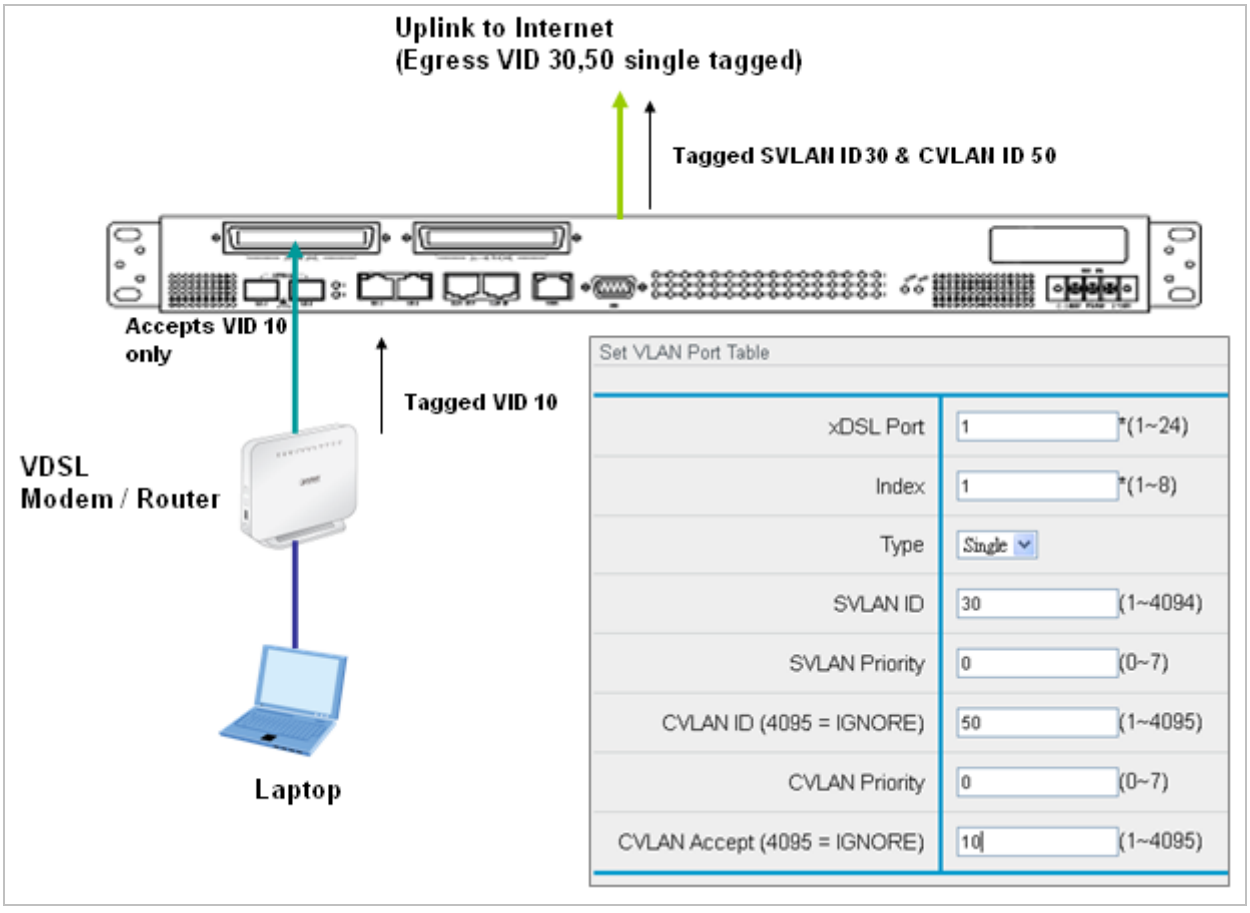


Figure 4-2-23: Example of setting Single Tagged packet in and Double Tagged packet out

4.2.17 Access Control List Group

This section introduces how to configure access control list group. The screen in Figure 4-2-24 appears.

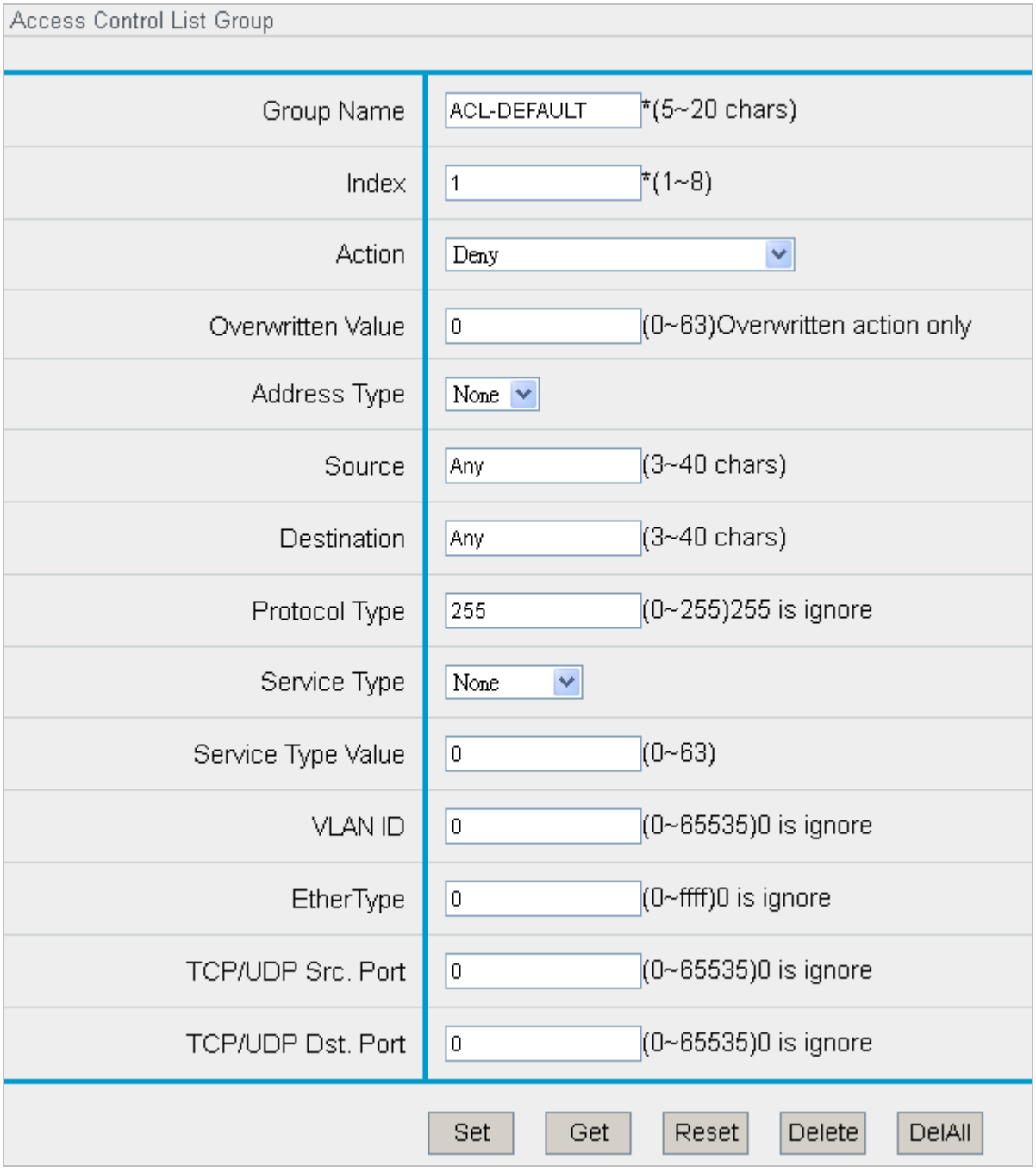


Figure 4-2-24: Access Control List Group Page Screenshot

The current column is used to show the active IP configuration.

Object	Description
• **Group Name**	Allows user to change ACL group name. **Default**: ACL-DEFAULT
• **Index**	Allows user to change group index and it offers 8 indexes totally. It means ACL sub-index for each group name. Each ACL group can be configured 1~128 sub-indexes. **Default**:1
• **Action**	Once related parameters are complied (type~TCP/UDP port), “Action parameters” will be executed. **Default**: Deny **Valid option includes**: 1. Deny: Deny access. 2. TOS to SVLAN Priority 3. TOS to CVLAN Proority 4. SVLAN Priority to TOS 5. CVLAN Priority to TOS 6. SVLAN Priority to CVLAN Priority 7. CVLAN Priority to SVLAN Priority 8. SVLAN Priority overwritten 9. CVLAN Priority overwritten 10. ToS overwritten
• **Overwritten Value**	Allows user to indicate the overwritten value if the “Action” option chooses SVLAN Priority overwritten, CVLAN Priority overwritten and ToS overwritten.
• **Address Type**	Allows user to choose address type. **Default**: None MAC: Mac address. IP: IP addrss: None: none.
• **Source**	Allows user to indicate source IP / MAC address. **Default**: Any Format Example: IP address: 192.168.0.100 MAC Address: 00:30:4F:00:01:02
• **Destination**	Allows user to indicate destination IP / MAC address. **Default**: Any Format Example: IP address: 192.168.0.100 MAC Address: 00:30:4F:00:01:02

<table>
<tr><td>• Protocol Type</td><td>Allows user to indicate protocol type number. User has to translate the protocol number from Hexadecimal To Decimal.
Ex.
<table>
<tr><td>Protocol Number (Hexadecimal)</td><td>Protocol Name</td><td>Decimal</td></tr>
<tr><td>0x01</td><td>ICMP</td><td>1</td></tr>
<tr><td>0x02</td><td>IGMP</td><td>2</td></tr>
<tr><td>0x06</td><td>TCP</td><td>6</td></tr>
<tr><td>0x11</td><td>UDP</td><td>17</td></tr>
</table></td></tr>
<tr><td>• Service Type</td><td>Allows user to indicate service type. Default: CoS
None / Cos / ToS / DSCP / Precedence</td></tr>
<tr><td>• Service Type Value</td><td>Allows user to indicate service type value; it is from 0 to 63. Default: 0</td></tr>
<tr><td>• VLAN ID</td><td>Allows user to indicate VLAN ID; it is from 0 to 65536. 0 is ignoring. Default: 0</td></tr>
<tr><td>• Ether Type</td><td>Allows user to indicate ether type number. Default: 0</td></tr>
<tr><td>• TCP/UDP Src. Port</td><td>Allows user to indicate TCP/UDP source port. 0 is ignoring. Default: 0</td></tr>
<tr><td>• TCP/UDP Dst. Port</td><td>Allows user to indicate TCP/UDP destination port. 0 is ignoring. Default: 0</td></tr>
</table>

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values. Input new created group name then you can get back the new created group configuration.

Reset: Click to reset IP address to default setting.

Delete: Click to delete current xDSL profile.

DelAll: Click to delete all xDSL profiles.

4.2.18 Remark Mapping

This section introduces how to configure remark mapping. The screen in Figure 4-2-25 appears.

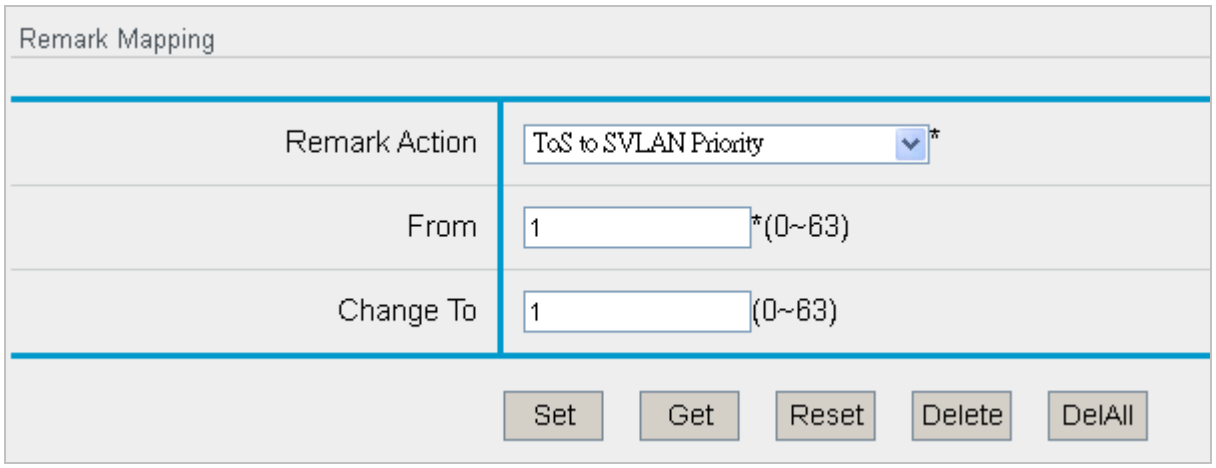


Figure 4-2-25: Remark Mapping Page Screenshot

The page includes the following fields:

Object	Description
• **Remark Action**	Allows user to indicate remark action type. **Default**: ToS to SVLAN Priority 1. TOS to SVLAN Priority 2. TOS to CVLAN Priority 3. SVLAN Priority to TOS 4. CVLAN Priority to TOS 5. SVLAN Priority to CVLAN Priority 6. CVLAN Priority to SVLAN Priority
• **From**	Allows user to indicate from a mapping digits.
• **Change To**	Allows user to indicate change to a new mapping digits.

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

Delete: Click to delete current xDSL profile.

DelAll: Click to delete all xDSL profiles.

4.2.19 IGMP Channel Profile

This section introduces how to configure IGMP Channel Profile. The screen in Figure 4-2-26 appears.

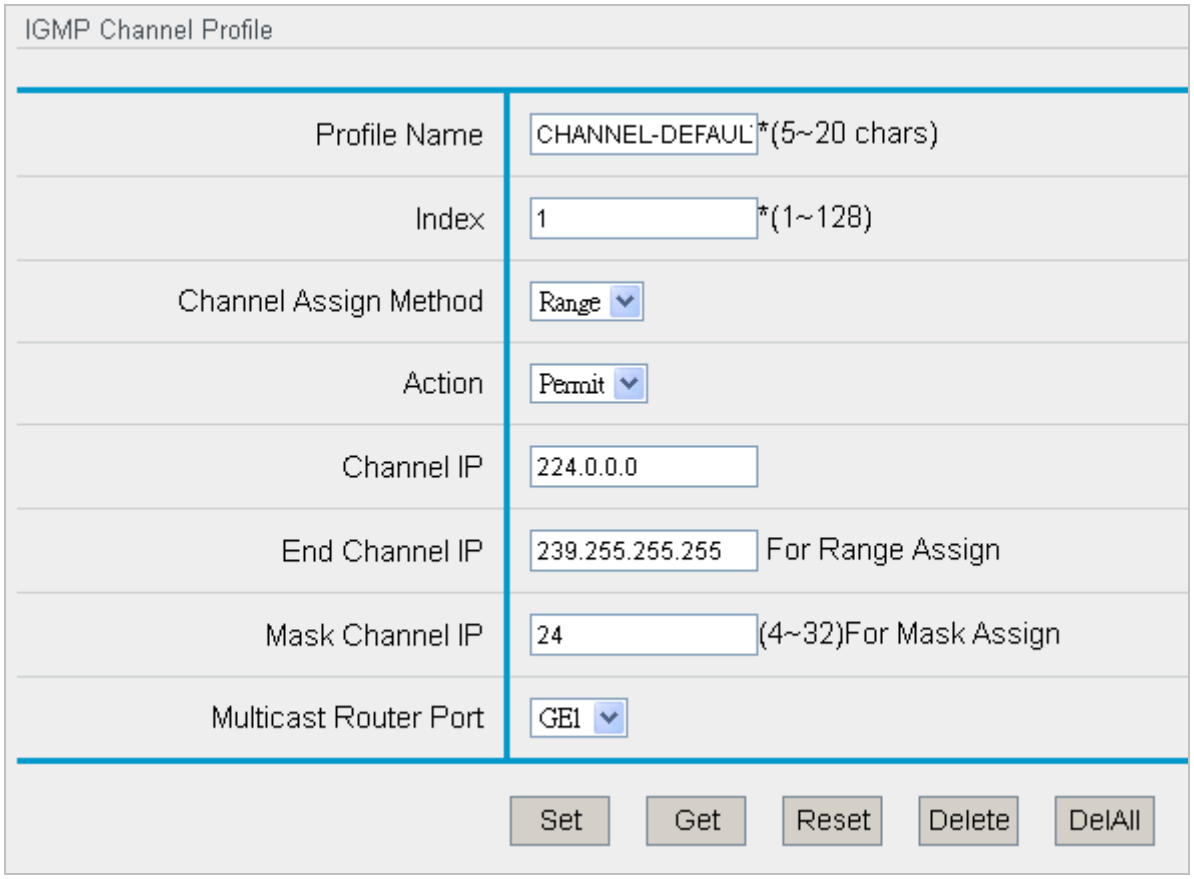


Figure 4-2-26: Remark Mapping Page Screenshot

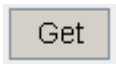
The page includes the following fields:

Object	Description
• **Profile Name (5~20 chars)**	Allows user to change profile name for creating or modifying profile. Please note that the default profile cannot be changed, and rename the default profile name directly for creating new profile.
• **Index (1~128)**	There are maximum 128 sub-indexes that can be set for each IGMP profile. Valid range: 1~128
• **Channel Assign Method**	Indicates the way to assigned available IGMP channels. **Valid option** includes: 1. Single: Indicate one IP and its value is “channel IP”. 2. Range: Indicates available IP which begins from “channel IP” to “End channel IP”. 3. Mask: Indicates available IP according to how many bits to be Ignored. It begins with “channel IP”.
• **Action**	Permit: Allow the access for IGMP packets.

	Deny: Refuse the access for IGMP packets **Default**: Permit
• **Channel IP**	Allows user to indicate multicast group IP to be assigned. **Default**: 224.0.0.0
• **End Channel IP**	Allows user to indicate available multicast group IP which begins from “channel IP” to “End channel IP”. **Default**: 239.255.255.255
• **Mask Channel IP**	Mask: Indicates available IP according to how many bits to be Ignored. It begins with “channel IP”. **Valid option**:1~32. **Default**: 24 e.g., Set Musk: 24, meaning available IGMP channels that begin with Channel IP (i.e. 224.0.0.0) to 224.0.0.255
• **Multicast Router Port**	Allows user to indicate multicast router port to GE1 or GE2. **Default**: GE1

Button

: Save configuration.



: Click to undo any changes made locally and revert to previously saved values. User has to input new created profile name then you can get back new created profile configuration.

: Click to reset IP address to default setting.

: Click to delete current xDSL profile.

: Click to delete all xDSL profiles.

.4.2.20 PBO Profile Apply

This section introduces how to configure “PBO Profile”. This page is for you to apply PBO profile to DSL port only. If you would like to change PBO profile setting, please go visit the power back off profile page and make a new profile first. The screen in Figure 4-2-27 appears.

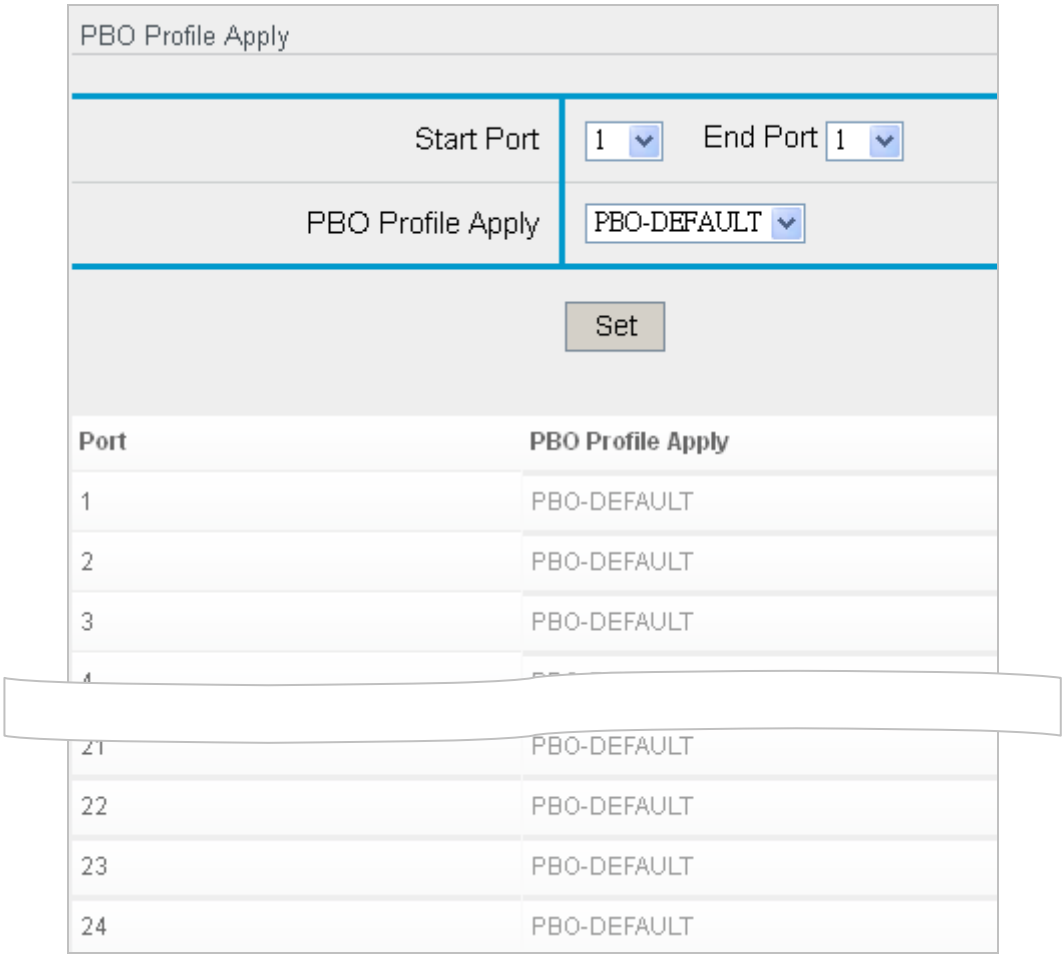


Figure 4-2-27: PBO Profile Page Screenshot

The page includes the following fields:

Object	Description
• **Start Port**	Allows user to set up port range.
• **End Port**	Allows user to set up port range.
• **PBO Profile Apply**	Allows user to apply PBO profile. Default is PBO-DEFAULT.

Button

Set: Save configuration.

.4.2.21 Power Back Off Profile

This section introduces how to configure power back off profile. The screen in Figure 4-2-28 appears.

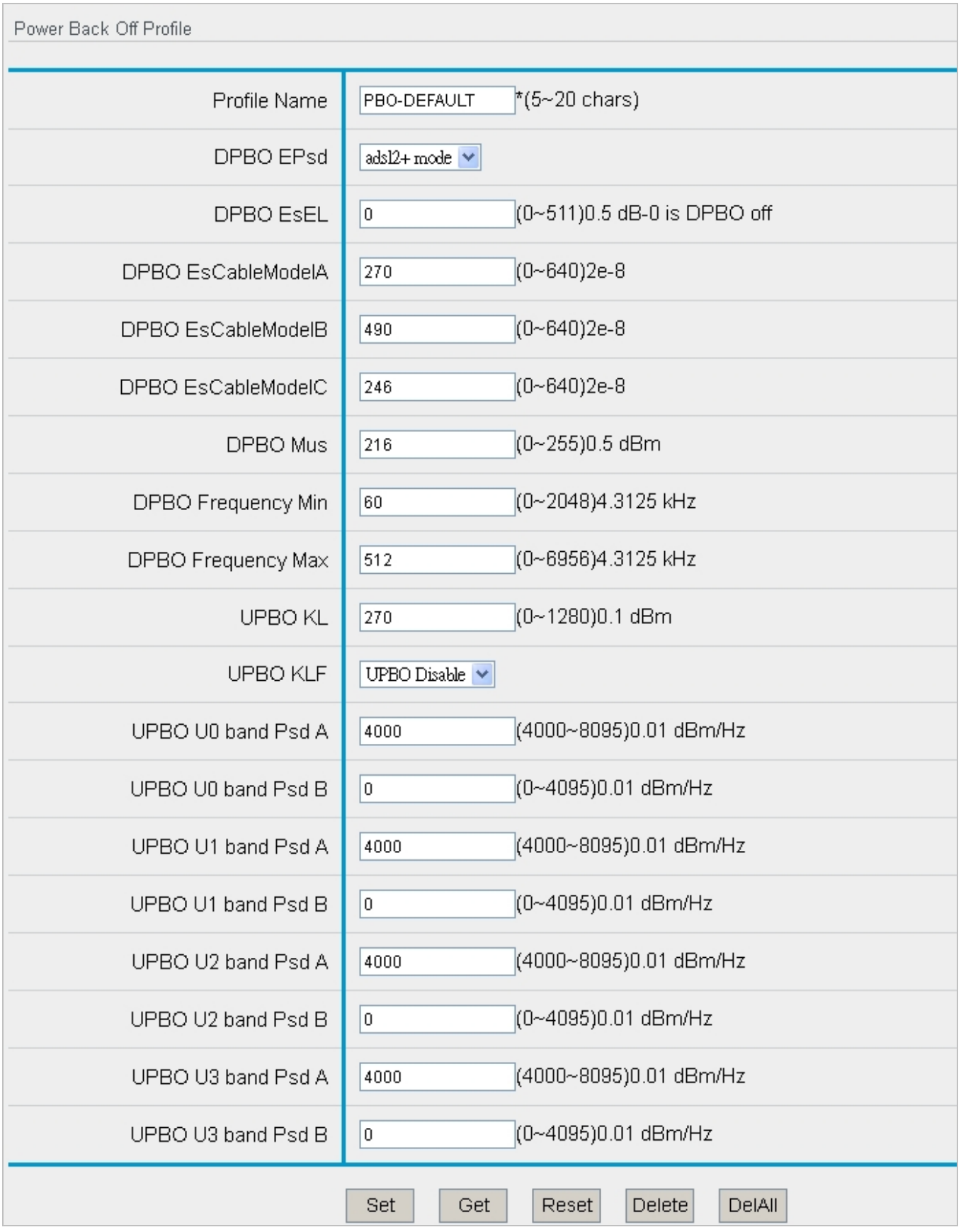


Figure 4-2-28: Power Back Off Profile Page Screenshot

The page includes the following fields:

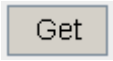
Object	Description
• **Profile Name**	Allows user to input new profile name for creating a new profile. Default is PBO-DEFAULT. Please note that default profile cannot be changed.
• **DPBO EPsd**	Allows user to select different ADSL modes from DPBO exchange PSD. There are ADSL mode, ADSL2+ mode, VDSL2 mode and custom. Default is ADSL2+ mode.
• **DPBO EsEL**	This configuration parameter defines the assumed electrical length of cables (E-side cables) connecting exchange-based DSL services to a remote flexibility point (cabinet) that hosts the xTU-C that is subject to spectrally shaped downstream power back- off (DPBO) depending on this length. The electrical length is defined as the loss (in dB) of an equivalent length of hypothetical cable at a reference frequency defined by the network operator or in spectrum management regulations. This parameter shall be coded as an unsigned integer representing an electrical length from 0 dB (coded as 0) to 255.5 dB (coded as 511) in steps of 0.5 dB. All values in the range are valid. If this parameter is set to '0', the DPBO shall be disabled.
• **DPBO EsCableModelA**	The E-side Cable Model parameter A (DPBOESCMA) of the cable model (DPBOESCM) for cables connecting exchange-based DSL services to a remote flexibility point (cabinet), that hosts the xTU-C that is subject to spectrally shaped downstream power back- off (DPBO) depending on this value. It is used to estimate the frequency dependent loss of E-side cables calculated from the xdsl2LConfProfDpboEsEL (DPBOESEL) parameter. Possible values shall be coded as unsigned integers representing a scalar value from -1 (coded as 0) to 1.5 (coded as 640) in steps of 2^-8. All values in the range are valid. This parameter is used only for G.993.2.
• **DPBO EsCableModelB**	The E-side Cable Model parameter B (DPBOESCMB) of the cable model (DPBOESCM) for cables connecting exchange-based DSL services to a remote flexibility point (cabinet), that hosts the xTU-C that is subject to spectrally shaped downstream power back- off (DPBO) depending on this value. It is used to estimate the frequency dependent loss of E-side cables calculated from the xdsl2LConfProfDpboEsEL (DPBOESEL) parameter. Possible values shall be coded as unsigned integers representing a scalar value from -1 (coded as 0) to 1.5 (coded as 640) in steps of 2^-8. All values in the range are valid. This parameter is used only for G.993.2.
• **DPBO EsCableModelC**	The E-side Cable Model parameter C (DPBOESCMC) of the cable model (DPBOESCM) for cables connecting exchange-based DSL services to a remote flexibility point (cabinet), that hosts the xTU-C that is subject to spectrally shaped downstream power back- off (DPBO) depending on this

	value. The cable model is in terms of three scalars xdsl2LConfProfDpboEsCableModelA (DPBOESCMA), xdsl2LConfProfDpboEsCableModelB (DPBOESCMB), and xdsl2LConfProfDpboEsCableModelC (DPBOESCMC), that are used to estimate the frequency dependent loss of E-side cables calculated from the xdsl2LConfProfDpboEsEL (DPBOESEL) parameter. Possible values shall be coded as unsigned integers representing a scalar value from -1 (coded as 0) to 1.5 (coded as 640) in steps of 2^-8. All values in the range are valid. This parameter is used only for G.993.2.
• **DPBO Mus**	This configuration parameter defines the assumed minimum usable receive PSD mask (in dBm/Hz) for exchange-based services, used to modify parameter xdsl2LConfProfDpboFMax (DPBOFMAX) defined below (to determine the DPBO). It shall be coded as an unsigned integer representing a PSD mask level from 0 dBm/Hz (coded as 0) to -127.5 dBm/Hz (coded as 255) in steps of 0.5 dBm/Hz. All values in the range are valid. NOTE - the PSD mask level is 3.5 dB above the signal PSD level. This parameter is used only for G.993.2.
• **DPBO Frequency Min**	This configuration parameter defines the minimum frequency from which the DPBO shall be applied. It ranges from 0 kHz (coded as 0) to 8832 kHz (coded as 2048) in steps of 4.3125 kHz. This parameter is used only for G.993.2.
• **DPBO Frequency max**	This configuration parameter defines the maximum frequency at which DPBO may be applied. It ranges from 138 kHz (coded as 32) to 29997.75 kHz (coded as 6956) in steps of 4.3125 kHz. This parameter is used only for G.993.2.
• **UPBO KL**	This configuration parameter defines the electrical length expressed in dB at 1 MHz, kl0, configured by the CO-MIB. The value ranges from 0 (coded as 0) to 128 dB (coded as 1280) in steps of 0.1 dB. This parameter is relevant only if xdsl2LConfProfUpboKLF is set to 'override (2)', which indicates that this parameter's value will override the VTUs' determination of the electrical length. If xdsl2LConfProfUpboKLF is set either to auto (1) or disableUpbo (3), then this parameter will be ignored.
• **UPBO KLF**	Defines the upstream power back off force mode.
• **UPBO U0 band Psd A** • **UPBO U1 band Psd A** • **UPBO U2 band Psd A** • **UPBO U3 band Psd A**	This configuration parameter defines the 'a' reference parameter of the UPBO reference PSD used to compute the upstream power back-off for the upstream band. A UPBO PSD defined for each band shall consist of two parameters [a, b]. Parameter 'a' (xdsl2LConfProfUpboPsdA) ranges from 40 dBm/Hz (coded as 4000) to 80.95 dBm/Hz (coded as 8095) in steps of 0.01 dBm/Hz; and parameter 'b' (xdsl2LConfProfUpboPsdB) ranges from 0 dBm/Hz (coded as 0) to 40.95 dBm/Hz (coded as 4095) in steps of 0.01 dBm/Hz. The UPBO reference PSD at the frequency 'f' expressed in MHz shall be equal to '-a-b(SQRT(f))'. Setting xdsl2LConfProfUpboPsdA to 4000 and

	xdsl2LConfProfUpboPsdB to 0 is a special configuration to disable UPBO in the respective upstream band.
• **UPBO U0 band Psd B** • **UPBO U1 band Psd B** • **UPBO U2 band Psd B** • **UPBO U3 band Psd B**	This configuration parameter defines the 'b' reference parameter of the UPBO reference PSD used to compute the upstream power back-off for the upstream band. A UPBO PSD defined for each band shall consist of two parameters [a, b]. Parameter 'a' (xdsl2LConfProfUpboPsdA) ranges from 40 dBm/Hz (coded as 4000) to 80.95 dBm/Hz (coded as 8095) in steps of 0.01 dBm/Hz; and parameter 'b' (xdsl2LConfProfUpboPsdB) ranges from 0 dBm/Hz (coded as 0) to 40.95 dBm/Hz (coded as 4095) in steps of 0.01 dBm/Hz. The UPBO reference PSD at the frequency 'f' expressed in MHz shall be equal to '-a-b (SQRT(f))'. Setting xdsl2LConfProfUpboPsdA to 4000 and xdsl2LConfProfUpboPsdB to 0 is a special configuration to disable UPBO in the respective upstream band.

Button

: Save configuration.



: Click to undo any changes made locally and revert to previously saved values. User has to input new created profile name then you can get back the new created profile configuration.

: Click to reset IP address to default setting.

: Click to delete current xDSL profile.

: Click to delete all xDSL profiles.

4.3 Alarm

4.3.1 List Current Alarms

This section introduces how to configure List Current Alarms for displaying present data of the current alarm event. The screen in Figure 4-3-1 appears.

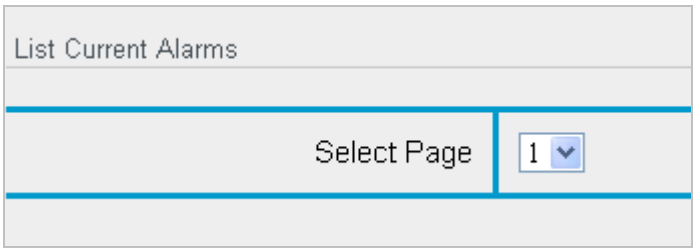


Figure 4-3-1: List Current Alarms Page Screenshot

The page includes the following fields:

Object	Description
• **Select Page**	Allows user to indicate page number to show the current alarm data.

4.3.2 List Alarms History

This section introduces how to configure List Alarm History for displaying history alarm data. The screen in Figure 4-3-2 appears.

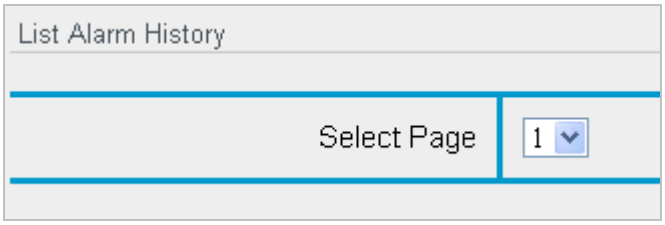


Figure 4-3-2: List Current Alarms Page Screenshot

The page includes the following fields:

Object	Description
• **Select Page**	Allows user to indicate page number to show history alarm data.

4.3.3 Clear Alarm History

User just needs to click “Clear Alarm History” link from menu tree. The screen in Figure 4-3-3 appears.

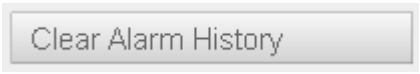


Figure 4-3-3: Clear Alarm History Page Screenshot

4.3.4 Operate Alarm Cut Off

The operate alarm cut off is for you to cut off audio alarm sound if 4th external alarm output has been triggered. The screen in Figure 4-3-4 appears.

Figure 4-3-4: Operate Alarm Cut off Page Screenshot

4.3.5 Modify Alarm Severity

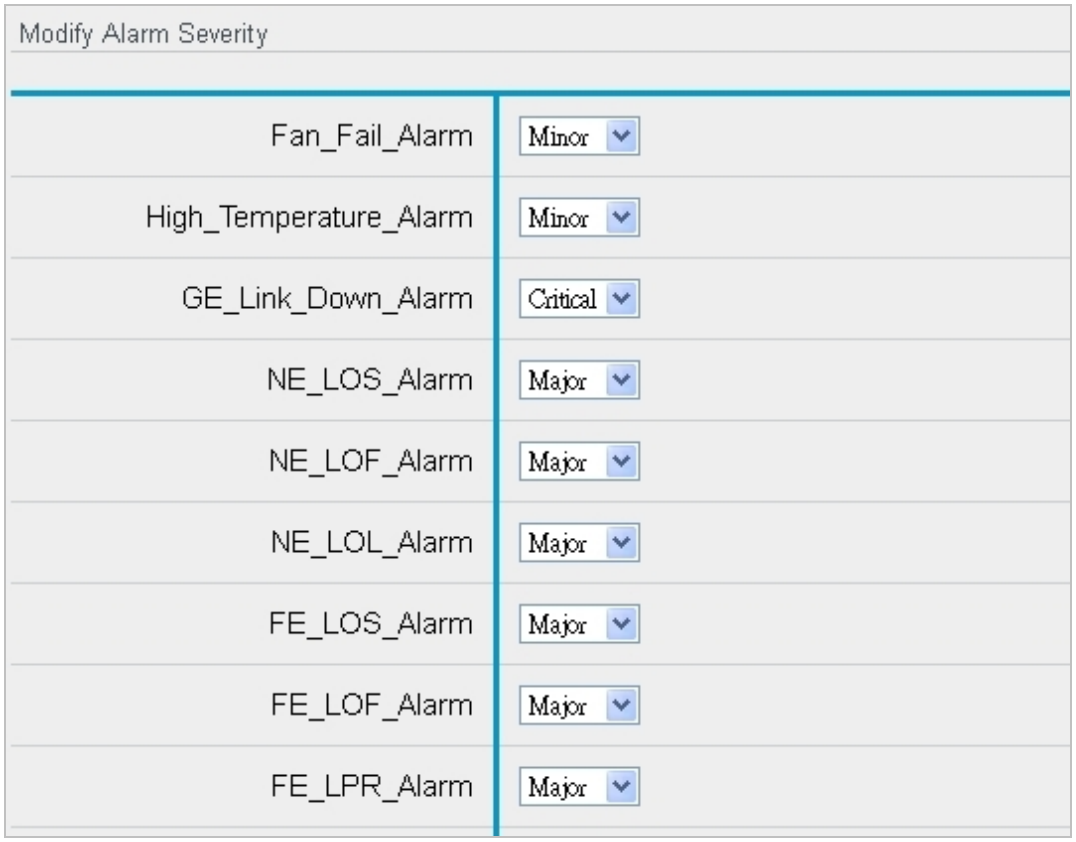
This section introduces how to configure Modify Alarm Severity. Define alarm severity is going to help user to manage which alarm severity level should be outputted to what alarm out group. The screen in Figure 4-3-5 appears

As built-in alarm output assignment to “ALARM OUT” port is as following table.

For example, if user set “FAN_Fail_Alarm” severity to “Minor” then “External Alarm OUT3” will be triggered when XDL-2420R fan has stopped.

If user set “FAN_Fail_Alarm” severity to “Critical” then “External Alarm OUT1” will be triggered when XDL-2420R fan has stopped.

Object	Severity Definition
• **External Alarm OUT1**	Critical
• **External Alarm OUT2**	Major
• **External Alarm OUT3**	Minor
• **External Alarm OUT4**	For audio alarm device only. (Use “Operate Alarm Cut Off” can control the alarm out immediately.)



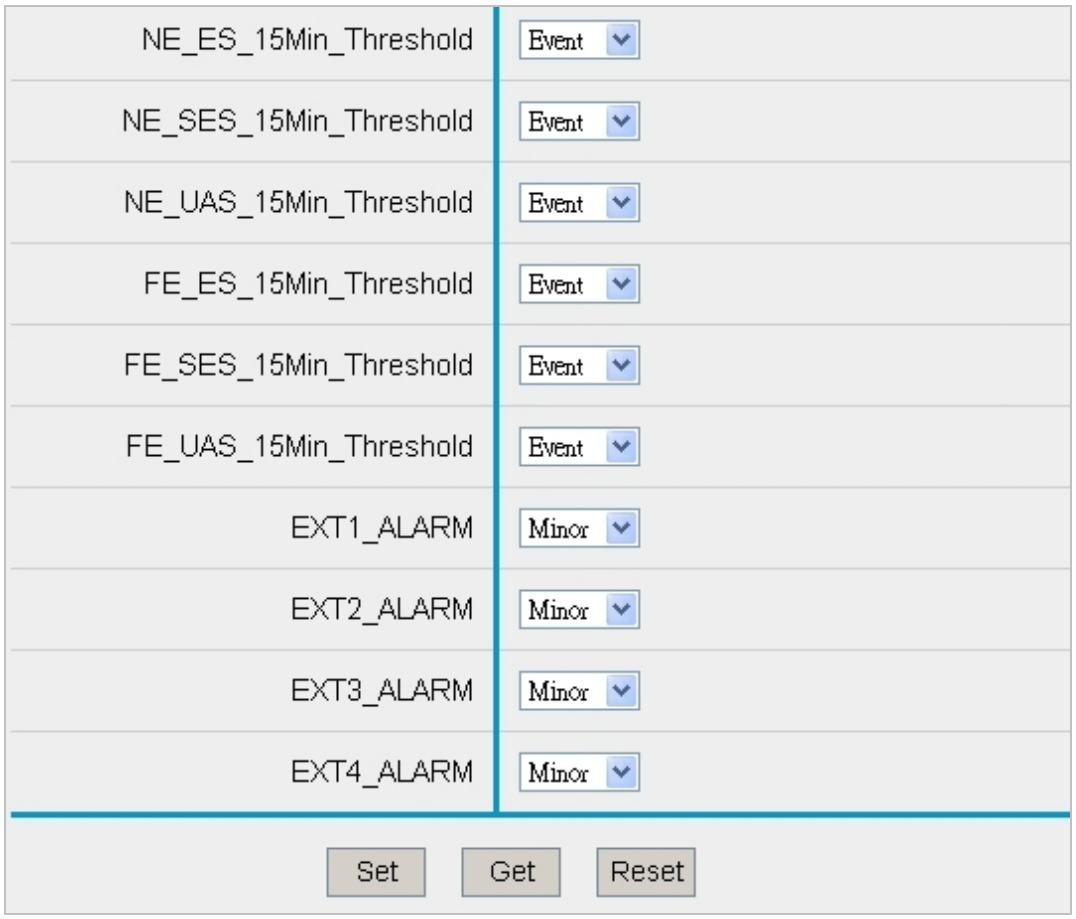


Figure 4-3-5: Modify Alarm Severity Page Screenshot

The page includes the following fields:

Object	Description
• **Fan_Fail Alarm**	Allows user to set fan failure alarm type to critical, major and minor, event or info.
• **High_Temperature_Alarm**	Allows user to set high temperature alarm type to critical, major and minor, event or info. This alarm event triggering is according to “Temperature Threshold” setting. If system temperature has reached or exceeded the temperature threshold then high temperature alarm will be triggered.
• **GE_Link Down_Alarm**	Allows user to set GE port link down alarm type to critical, major, minor, event or info.
• **NE_LOS_Alarm**	Allows user to set NE_LOS_Alarm type to critical, major and minor, event or info.
• **NE_LOF_Alarm**	Allows user to set NE_LOF_Alarm type to critical, major and minor, event or info.
• **NE_LOL_Alarm**	Allows user to set NE_LOL_Alarm type to critical, major and minor, event or info.
• **FE_LOS_Alarm**	Allows user to set FE_LOS_Alarm type to critical, major and minor, event or info.
• **FE_LOF_Alarm**	Allows user to set FE_LOF_Alarm type to critical, major and minor, event or info.
• **FE_LOL_Alarm**	Allows user to set FE_LOL_Alarm type to critical, major and minor, event or info.
• **FE_LPR_Alarm**	Allows user to set FE_LPR_Alarm type to critical, major and minor, event or info.

• **NE_ES_15Min_Threshold**	Allows user to set NE_ES_15Min_Threshold type to critical, major and minor, event or info.
• **NE_SES_15Min_Threshold**	Allows user to set NE_SES_15Min_Threshold type to critical, major and minor, event or info.
• **NE_UAS_15Min_Threshold**	Allows user to set NE_UAS_15Min_Threshold type to critical, major and minor, event or info.
• **FE_ES_15Min_Threshold**	Allows user to set FE_ES_15Min_Threshold type to critical, major and minor, event or info.
• **FE_SES_15Min_Threshold**	Allows user to set FE_SES_15Min_Threshold type to critical, major and minor, event or info.
• **FE_UAS_15Min_Threshold**	Allows user to set FE_UAS_15Min_Threshold type to critical, major and minor, event or info.
• **EXT1_ALARM**	Allows user to set Alarm Input 1 mapping alarm type to critical, major and minor, event or info.
• **EXT2_ALARM**	Allows user to set Alarm Input 2 mapping alarm type to critical, major and minor, event or info.
• **EXT3_ALARM**	Allows user to set Alarm Input 3 mapping alarm type to critical, major and minor, event or info.
• **EXT4_ALARM**	Allows user to set Alarm Input 4 mapping alarm type to critical, major and minor, event or info.

**Note: When user sets up EXT ALARM (ALARM INPUT) severity, it will be relayed to alarm out at the same time if alarm input event has been triggered.

[Additional Alarm Description]

Specified line failures bit field about ATU-C/ATU-R. The meaning of all bits is as follows:

0: No failure present on the line

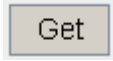
1: A failure is detected on the line.

Type	Description
LOS	It means Loss-of-signal failure. A (far-end) LOS failure is declared after 2.5 +- 0.5 s of contiguous (fared) LOS defect, or, if (far-end) LOS defect is present when the criteria for (far-end) LOF failure declaration have been met (see LOF definition below). A (far-end) LOS failure is cleared after 10 +- 0.5 s of no (far-end) LOS defected.
LOF	It means Loss-of-frame failure. A (far-end) LOF failure is declare+d after 2.5+-0.5 s of contiguous (RDI) SEF defect, except when an (far-end) LOS defect or failure is present (see LOS definition blow). A (far-end) LOF failure is cleared when (far-end) LOS failure is declared, or after 10 +- 0.5 s of no (RDI) SEF defect.
LOL	Loss of link LOL indicates a loss-of-link condition according to RFC2662.
LPR	It means Loss-of-power failure. • LPR_NE: An LPR failure is declared after 2.5 +- 0.5 s of contiguous near end LPR primitive presence. An LPR failure is cleared after 10 +- 0.5 s of no near-end LPR primitive presence.

	LPR_FE: A far end Loss of power - LPR-FE failure is declared after the occurrence of a far end LPR primitive followed by 2.5 +- 0.5 s of contiguous near end LOS defected. A far end LPR failure is cleared after 10 +- 0.5 s of no near end LOS defected.
ES	It means Error Seconds. This parameter is a count of 1 second intervals with following factors: 1. one or more CRC 8 anomalies summed over all received bearer channels 2. one or more LOS defects 3. one or more SEF defects one or more LPR defects
SES	It means Severely Error Seconds. This parameter is a count of 1 second intervals with 18 or more CRC 8 anomalies summed over all received bearer channels and related definition refer to items 2~4 of “ES”. If a common CRC is applied over multiple bearer channels, then each related CRC-8 anomaly shall be counted only once for the whole set of bearer channels over which the CRC is applied.
UAS	It means Unavailable Seconds. This parameter is a count of 1 second intervals for which the XDSL line is unavailable. The XDSL line becomes unavailable at the onset of 10 contiguous SES Ls. The 10 SESs are included in unavailable time. Once unavailable, the XDSL line becomes available at the onset of 10 contiguous seconds with no SESs. The 10 seconds with no SESs are excluded from unavailable time.

Button

: Save configuration.



: Click to undo any changes made locally and revert to previously saved values.

: Click to reset IP address to default setting.

4.3.6 Modify Alarm Reporting

This section introduces how to configure modify alarm reporting. The screen in Figure 4-3-6 appears

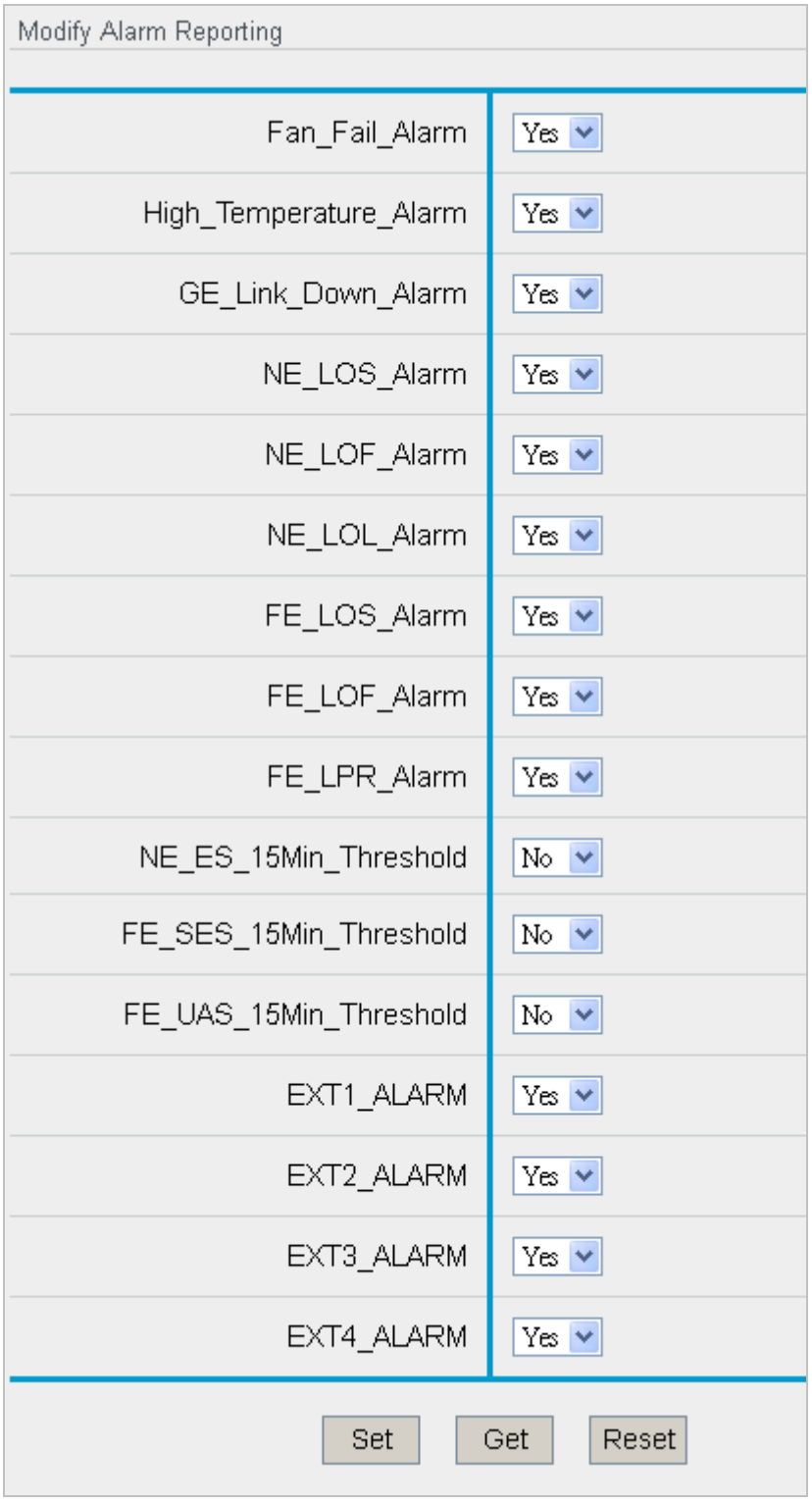


Figure 4-3-6: Modify Alarm Reporting Page Screenshot

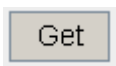
The Page includes the following fields:

Object	Description
• **Fan_Fail Alarm**	Allows user to set sending out fan fail alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **High_Temperature_Alarm**	Allows user to set sending out fhigh temperature alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **GE_Link Down_Alarm**	Allows user to set sending out GE port fail alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **NE_LOS_Alarm**	Allows user to set sending out NE lost of signel alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **NE_LOF_Alarm**	Allows user to set sending out NE lost of frame alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **NE_LOL_Alarm**	Allows user to set sending out NE lost of link alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **FE_LOS_Alarm**	Allows user to set sending out FE lost of signel alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **FE_LOF_Alarm**	Allows user to set sending out FE lost of frame alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **FE_LOL_Alarm**	Allows user to set sending out FE lost of link alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **FE_LPR_Alarm**	Allows user to set sending out FE LPR alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **NE_ES_15Min_Threshold**	Allows user to set sending out NE 15 minutes error seconds threshold alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **NE_SES_15Min_Threshold**	Allows user to set sending out NE15 minutes severely error seconds threshold alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred.

	No: Don't send out report to trap server when a specific alarm occurred.
• **NE_UAS_15Min_Threshold**	Allows user to set sending out NE 15 minutes unavailable seconds threshold alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **FE_ES_15Min_Threshold**	Allows user to set sending out FE15 minutes error seconds threshold alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **FE_SES_15Min_Threshold**	Allows user to set sending out FE 15 minutes severely error seconds threshold alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **FE_UAS_15Min_Threshold**	Allows user to set sending out FE 15 minutes unavailable seconds threshold alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **EXT1_ALARM**	Allows user to set sending out EXT1 alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **EXT2_ALARM**	Allows user to set sending out EXT1 alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **EXT3_ALARM**	Allows user to set sending out EXT1 alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.
• **EXT4_ALARM**	Allows user to set sending out EXT1 alarm report to trap server. **Yes**: Sent out alarm report to trap server when a specific alarm occurred. **No**: Don't send out report to trap server when a specific alarm occurred.

Button

: Save configuration.



: Click to undo any changes made locally and revert to previously saved values.

: Click to reset IP address to default setting.

4.3.7 External Alarm State

This section shows you external alarm state table. If an alarm is triggered, the state will be shown “ON” and the alarm group wire will be opened. As “Normal” state, the alarm group wire will be closed. The screen in Figure 4-3-7 appears

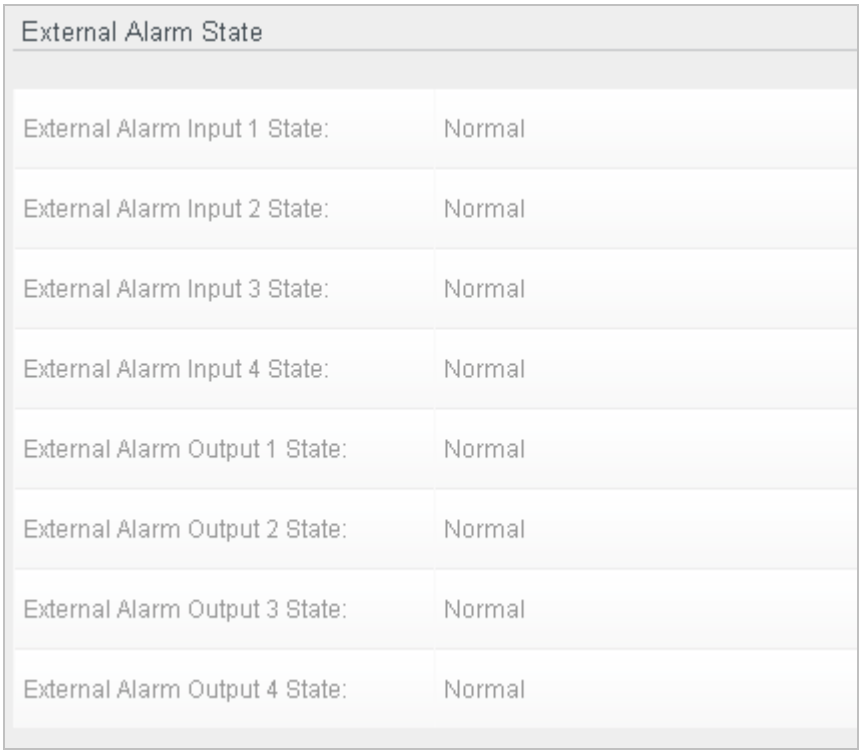


Figure 4-3-7: External Alarm State Page Screenshot

Note

Please note that when alarm in or alarm out has triggered, also the external alarm out4 is triggered at the same time.

4.3.8 Alarm IN and ALARM OUT Port Pin Assignment

One “ALARM IN” port offers 4 alarm input groups and a pair pin for one alarm input group.

Same group and pin assignment method for “ALARM OUT” port.

ALARM IN / ALARM OUT PIN Assignment:

Connects alarm input 1 to 4 groups via RJ45 jack. Alarm inputs are used for environment detection.

NO.	Wire Color	Alarm Severity Setting	Alarm IN PIN Mapping
1	White Orange	Minor	Alarm IN #1
2	Orange		
3	White Green	Minor	Alarm IN #2
4	Green		
5	White Blue	Minor	Alarm IN #3
6	Blue		
7	White Brown	Minor	Alarm IN #4
8	Brown		

Alarm outputs are used for fault alarm relay. When any alarm out group is triggered, it also triggers Alarm OUT #4, because the alarm out4 is set for audio alarm purpose, and of course, user can use “operate Alarm Cut Off” to recovery alarm out4 state.

NO.	Wire Color	Built-in Definition	Alarm OUT PIN Mapping
1	White Orange	Critical Alarm	Alarm OUT #1
2	Orange		
3	White Green	Major Alarm	Alarm OUT #2
4	Green		
5	White Blue	Minor Alarm	Alarm OUT #3
6	Blue		
7	White Brown	Audio	Alarm OUT #4
8	Brown		

4.4 Status

4.4.1 xDSL Line Status

This section is to show you xDSL lines status. The screen in Figure 4-4-1 appears.

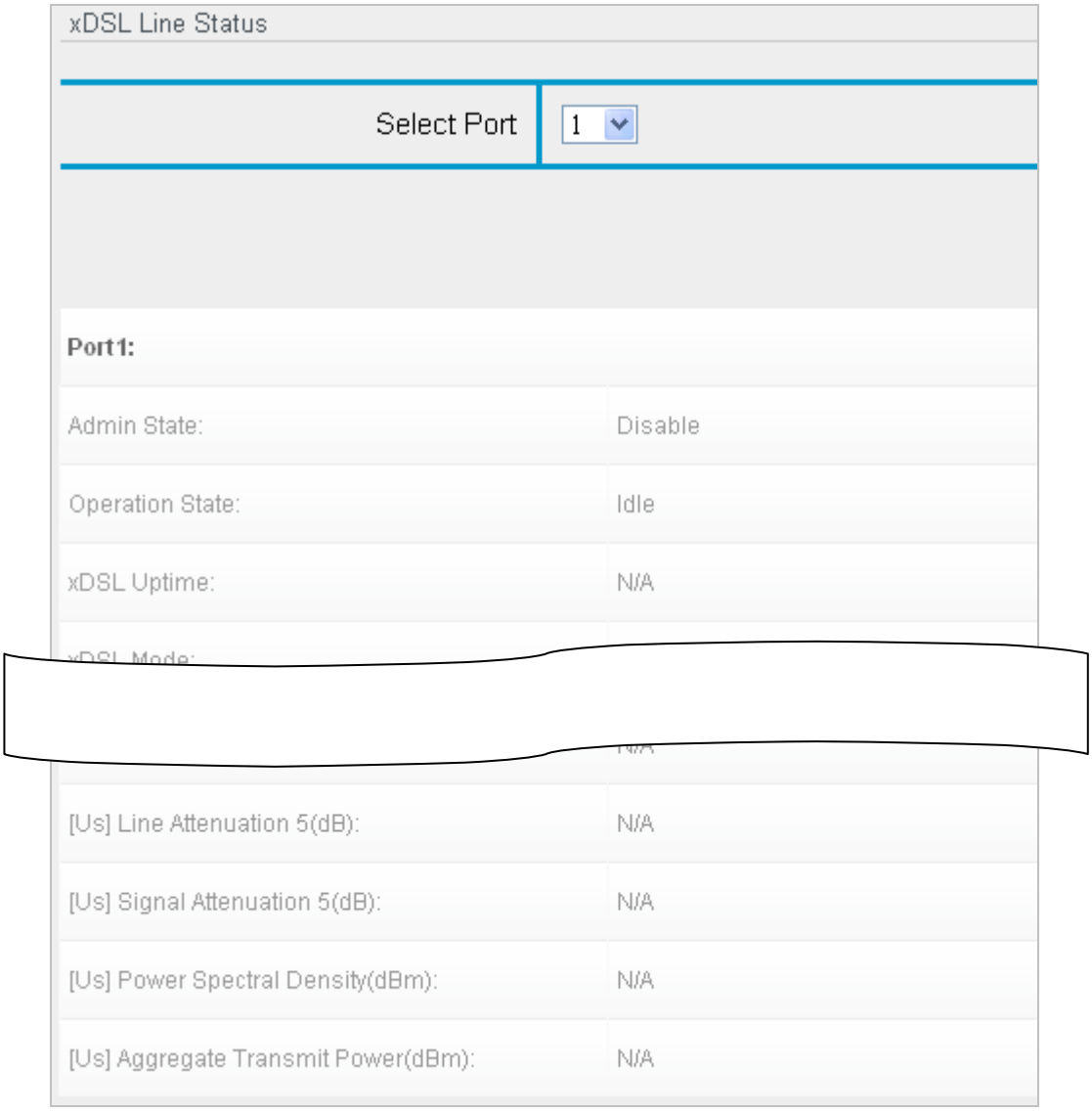


Figure 4-4-1: xDSL Line Status Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port status.

4.4.2 Forward Table

This section is to show you MAC address forwarding table through GE port. The screen in Figure 4-4-2 appears.

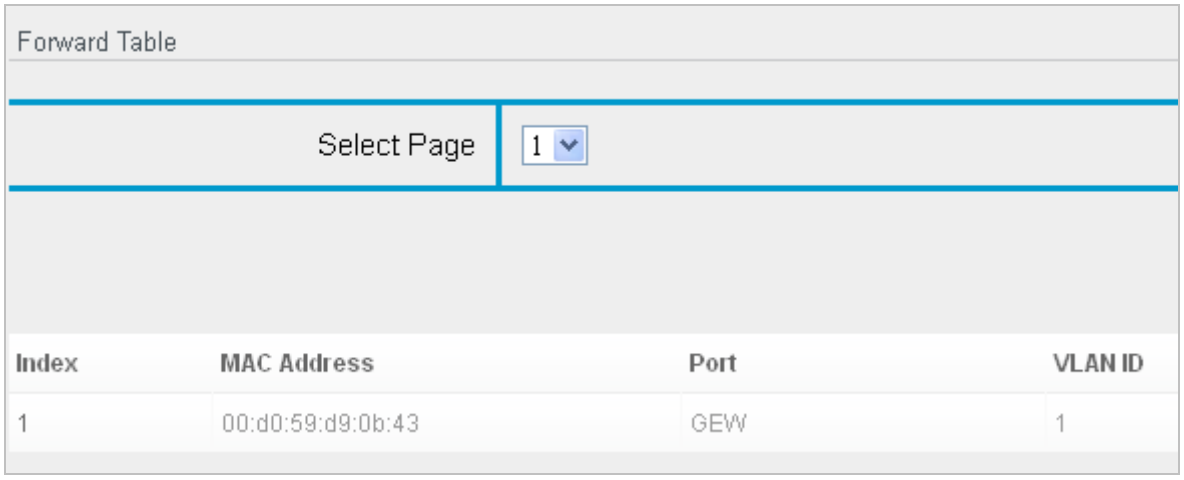


Figure 4-4-2: Forward Table Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port status.

4.4.3 LED Status

This section is to show you all xDSL LEDs and system LED status. The screen in Figure 4-4-3 appears.

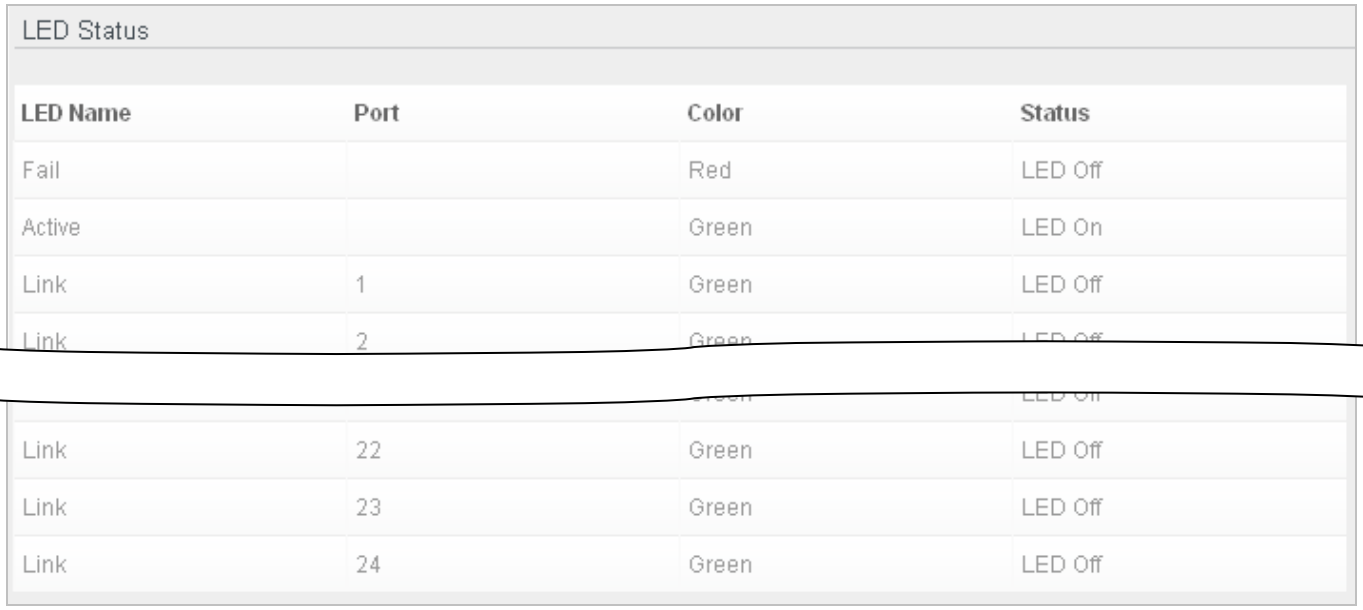


Figure 4-4-3: Forward Table Page Screenshot

4.5 Statistic

4.5.1 xDSL Statistics

This section is to show you per xDSL port statistics. The screen in Figure 4-5-1 appears.

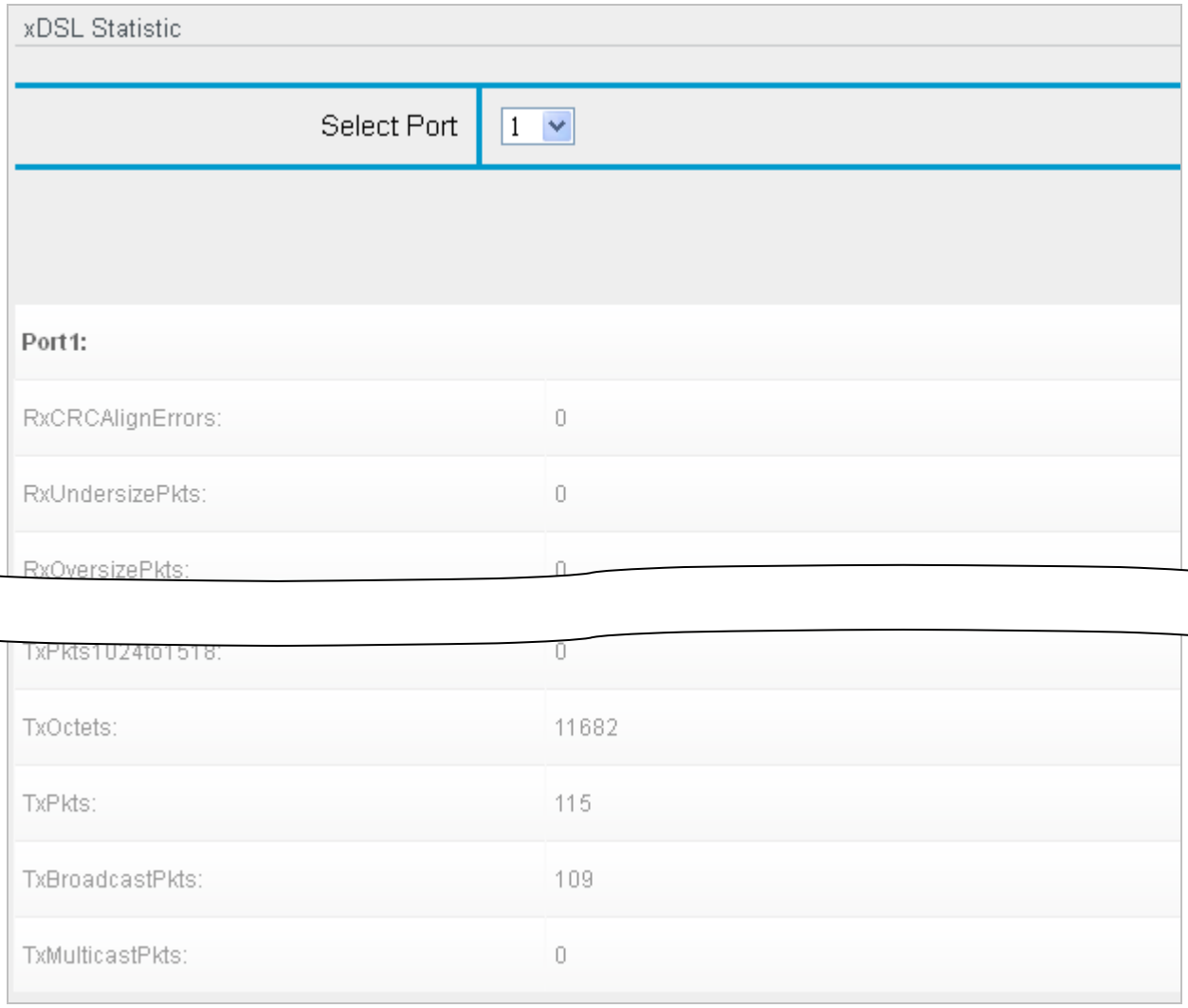


Figure 4-5-1: xDSL Line Status Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.

4.5.2 IGMP Group Table

This section is to show you IGMP Group Table statistics. The screen in Figure 4-5-2 appears.

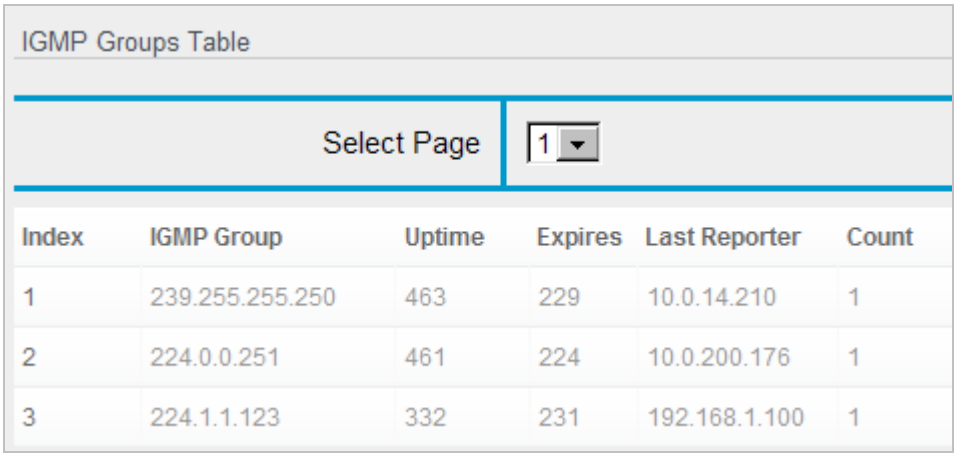


Figure 4-5-2: IGMP Group Table Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.

4.5.3 IGMP Snooping Table

This section is to show you IGMP Snooping Table statistics. The screen in Figure 4-5-3 appears.

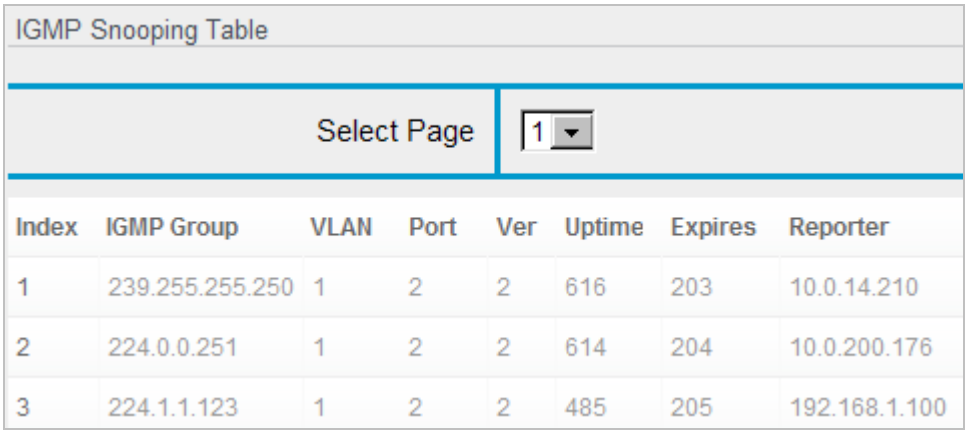


Figure 4-5-3: IGMP Snooping Table Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.

4.5.3 xDSL Port Bandwidth

This section is to show you per xDSL port bandwidth statistics. The screen in Figure 4-5-4 appears.

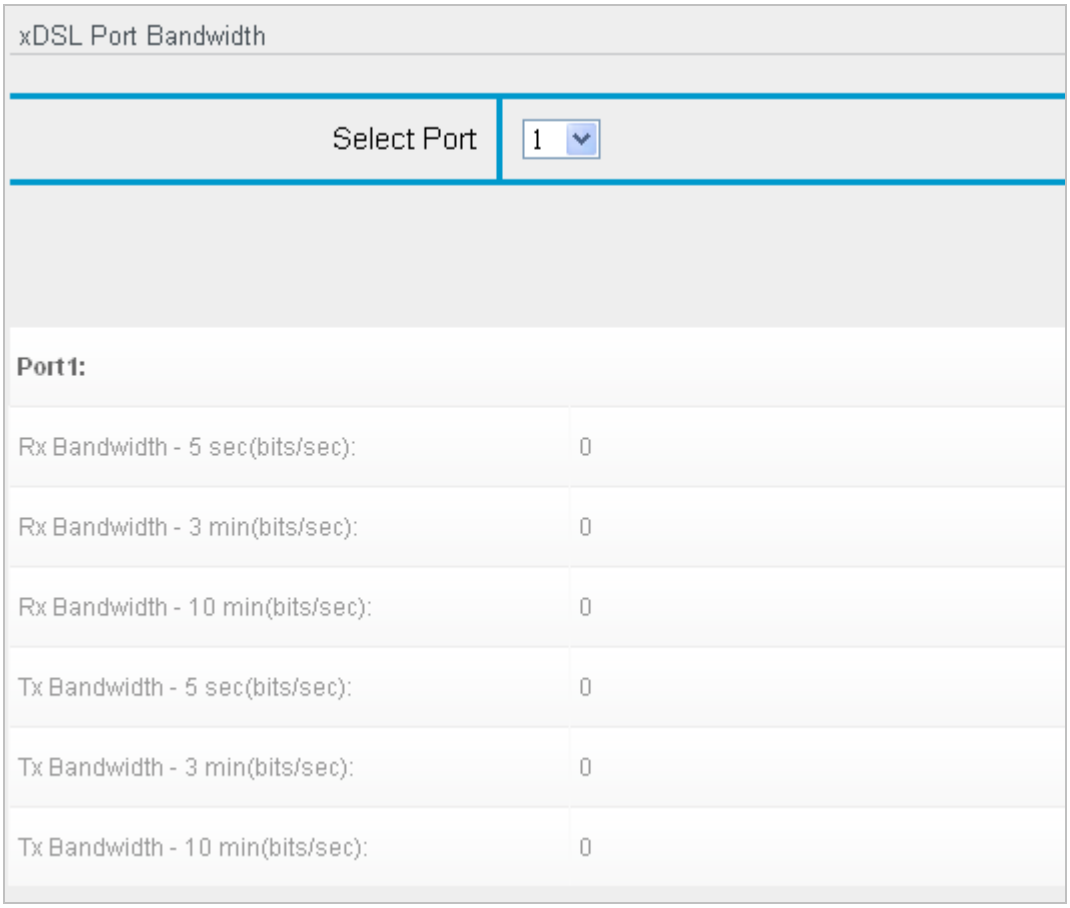


Figure 4-5-4: IGMP Snooping Table Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.

4.6 PM (Performance)

This chapter is to show you xDSL line performance statistics per 15 minutes, 1 hour and 1 day.

4.6.1 xDSL 15 Min PM

This section is to show you per 15 minutes xDSL port performance statistics. The screen in Figure 4-6-1 appears.

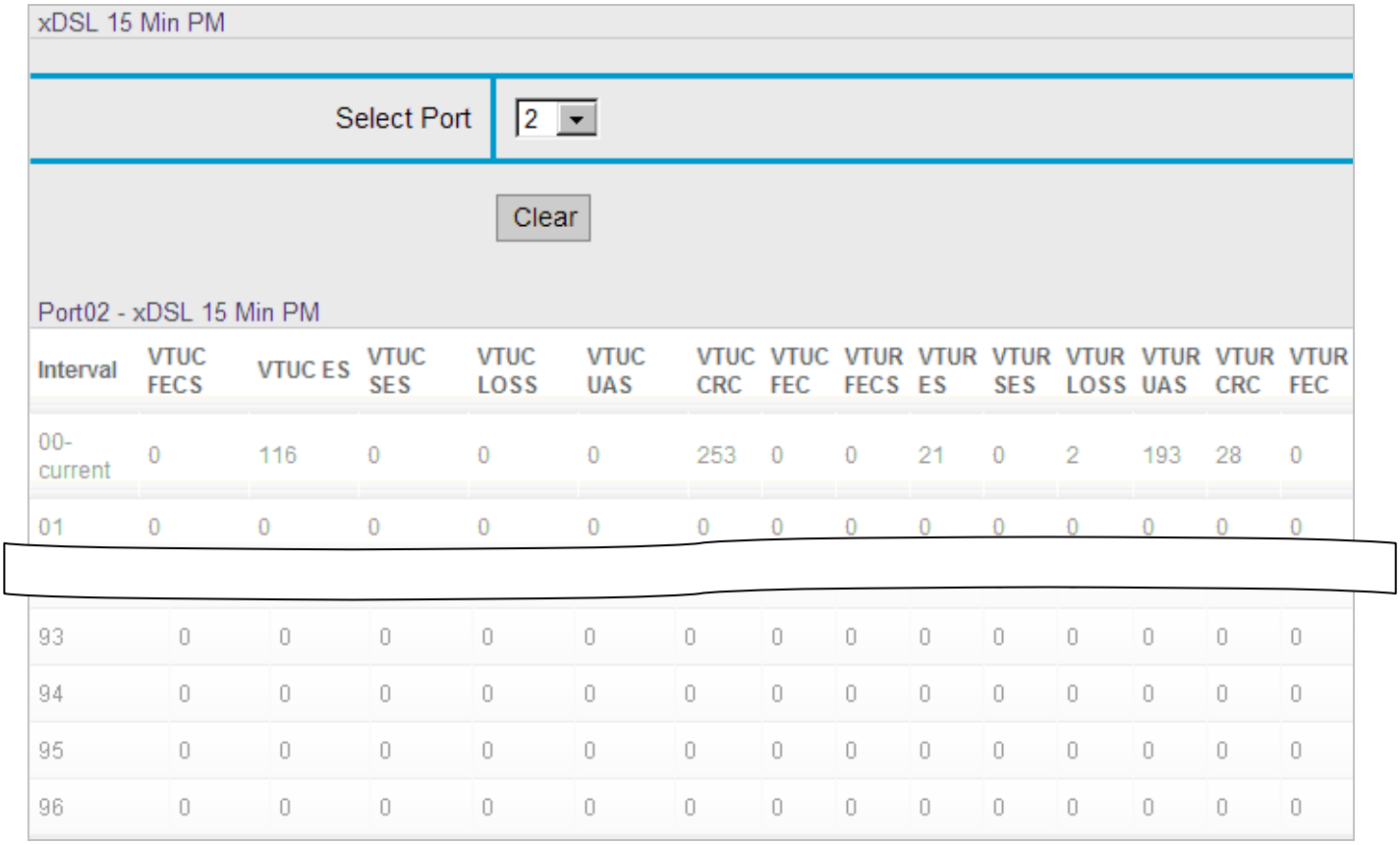


Figure 4-6-1: xDSL Per 15 Minute Performance Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.

Clear: This button is for you to clear whole performance statistics page.

4.6.2 xDSL 1 Hour PM

This section is to show you per 1 hour xDSL port performance statistics. The screen in Figure 4-6-2 appears.

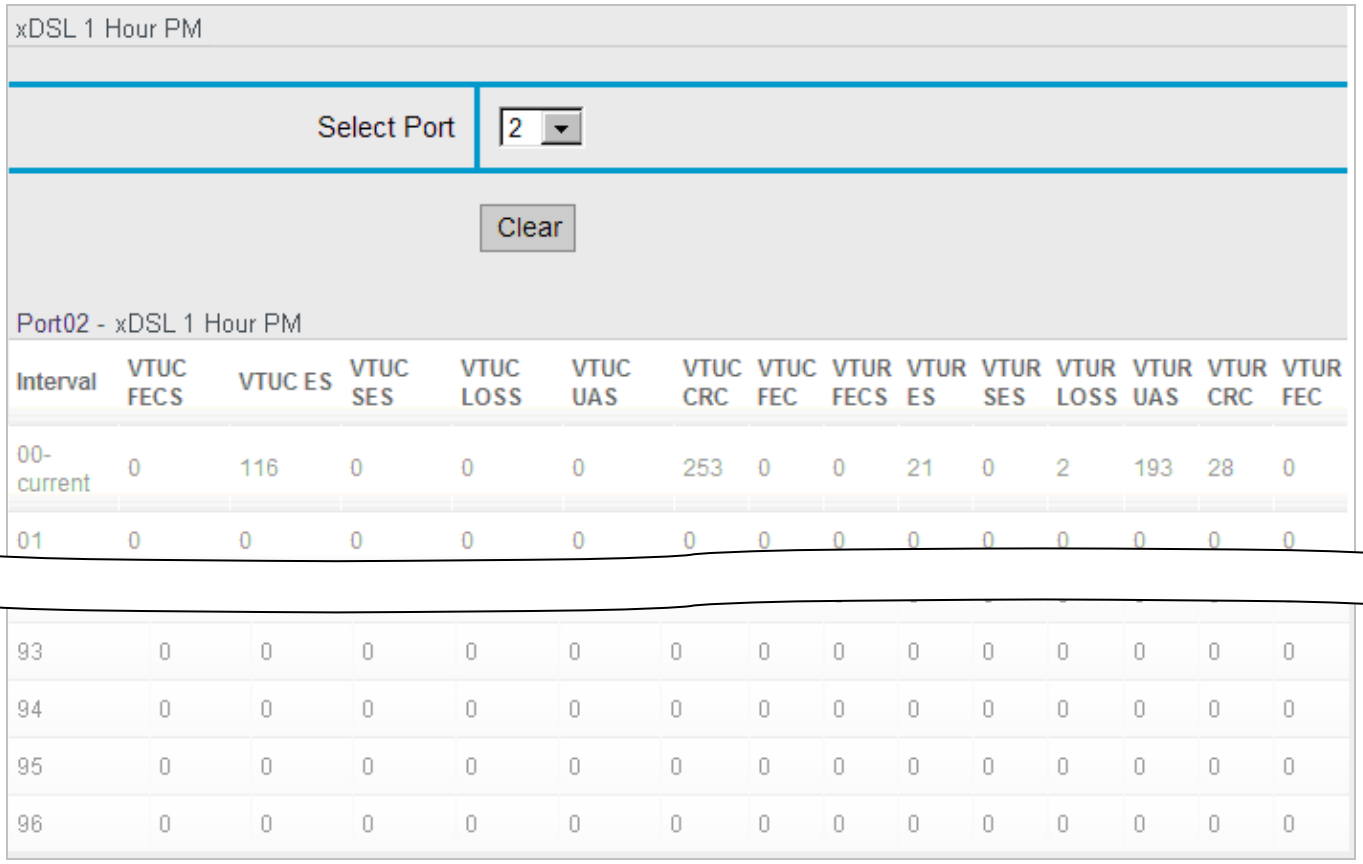


Figure 4-6-2: xDSL 1 hour Performance Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.

Clear: This button is for you to clear whole performance statistics page.

4.6.2 xDSL 1 Day PM

This section is to show you per 1 day xDSL port performance statistics. The screen in Figure 4-6-3 appears.

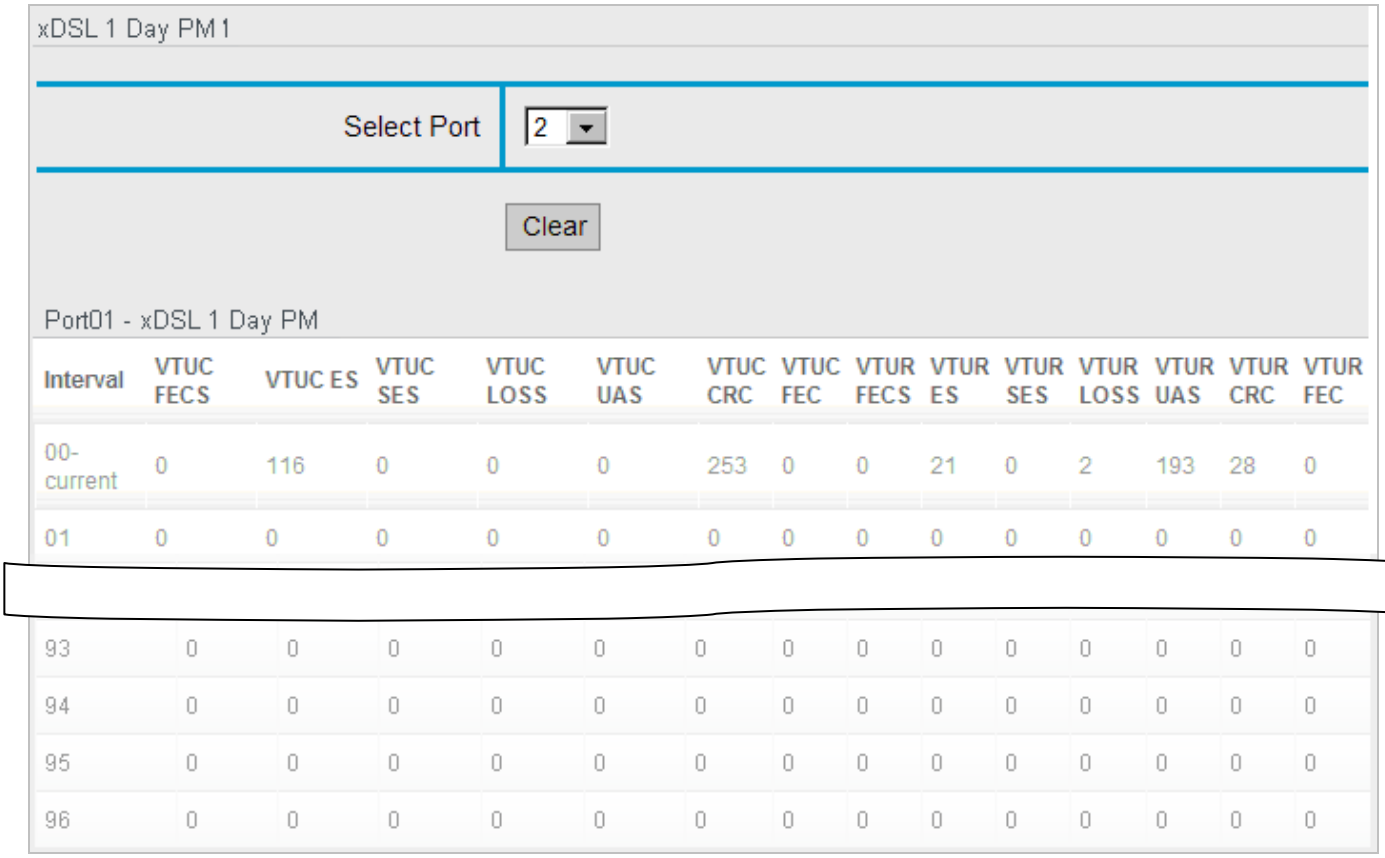


Figure 4-6-3: xDSL 1 Day Performance Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.

Clear: This button is for you to clear whole performance statistics page.

4.7 Test

This chapter introduces you about how to make single-ended loop testing (SELT) and XDL-2420R lamp testing.

4.7.1 SELT Single Port

The single-ended loop testing (SELT), like metallic testing from POTS world, is an automated way of testing a DSL loop from one end to the line, either from the central office (CO) or, less likely from the subscriber's end. Unlike dual-ended loop testing (DELT), where someone must install some sort of test device at customer's end of the line, SELT doesn't require a technician or any equipment at the subscriber site.

This section is to introduce you how to configure single-ended loop test configuration. The screen in Figure 4-7-1 appears.

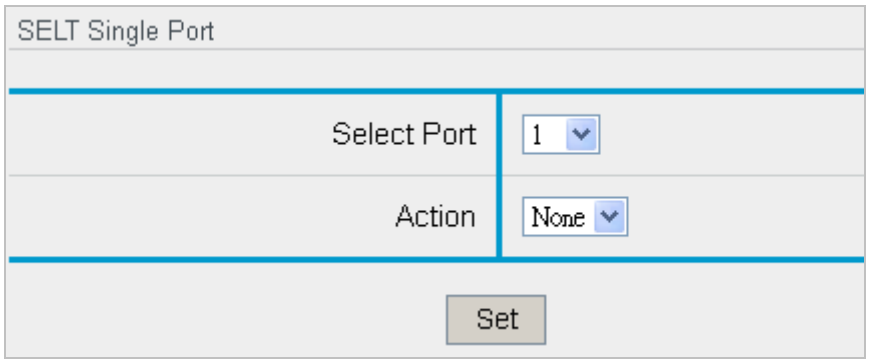


Figure 4-7-1: SELT Single Port Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.
• **Acton**	It offers you None, Stop and Start options to make xDSL line testing None: do anything. (**Default**) Stop: Stop to make loop testing to indicate xDSL port. Start: Start to make loop testing to indicate xDSL port.

Set: Save configuration.

4.7.2 SELT Result

This section is to show you single-ended loop test result. The screen in Figure 4-7-2 appears.

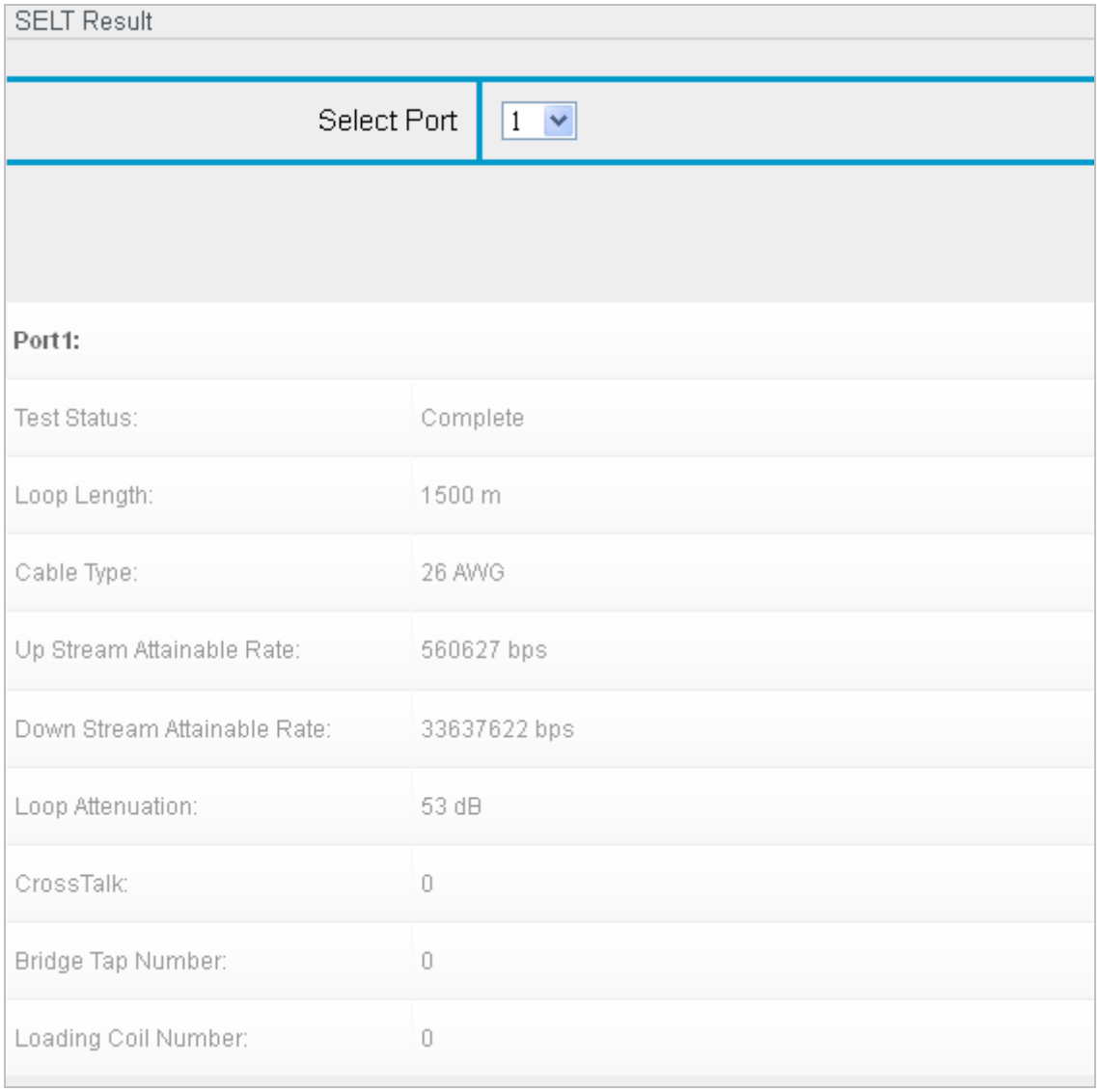


Figure 4-7-2: SELT Result Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to select xDSL port to show the port statistics.

4.7.3 Lamp Test

The lamp test is for you to check whether lamps on the XDL-2420R are good or bad. It doesn't have the configuration page, so you just need to click it from the menu tree. The screen in Figure 4-7-3 appears.

Figure 4-7-2: Lamp Test Page Screenshot

4.8 Administration

4.8.1 Version Information

This section is to show you about software version, hardware version, serial number of this device and MAC address information. The screen in Figure 4-8-1 appears.

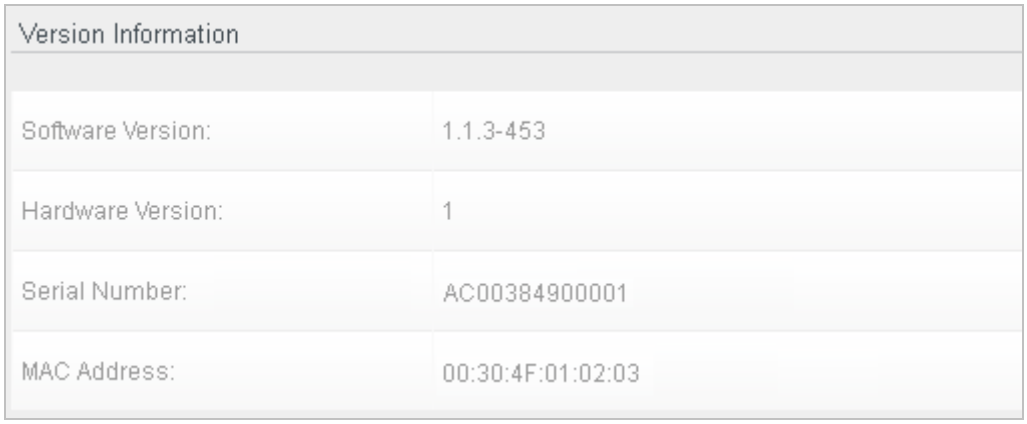
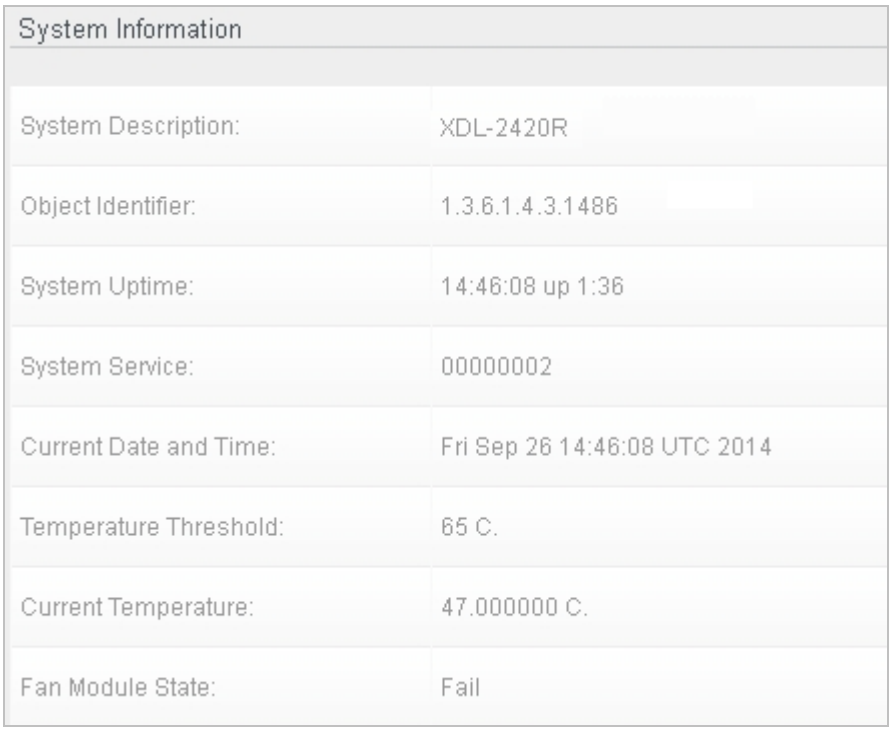


Figure 4-8-1: Version Information Page Screenshot

4.8.2 System Information

This section is to show you about system information. The screen in Figure 4-8-2 appears.



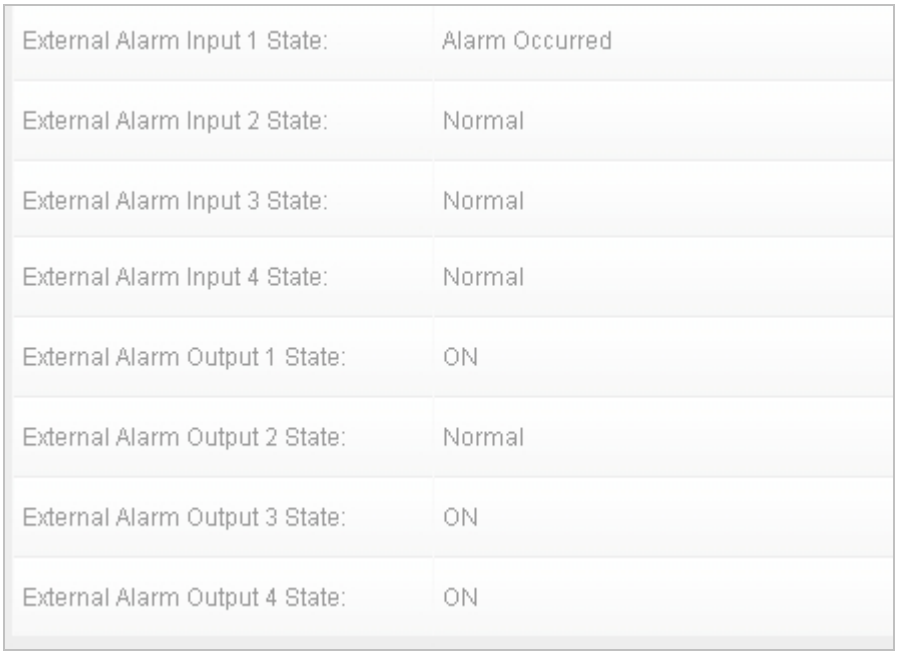


Figure 4-8-2: Version Information Page Screenshot

4.8.3 Modify Date and Time

This section is to introduce you about how to configure date and time configuration. Because the XDL-2420R has no battery inside and also it doesn't support NTP server, it cannot keep date and time for a long time; however, it can keep date and time information for about 3 days. The screen in Figure 4-8-3 appears.

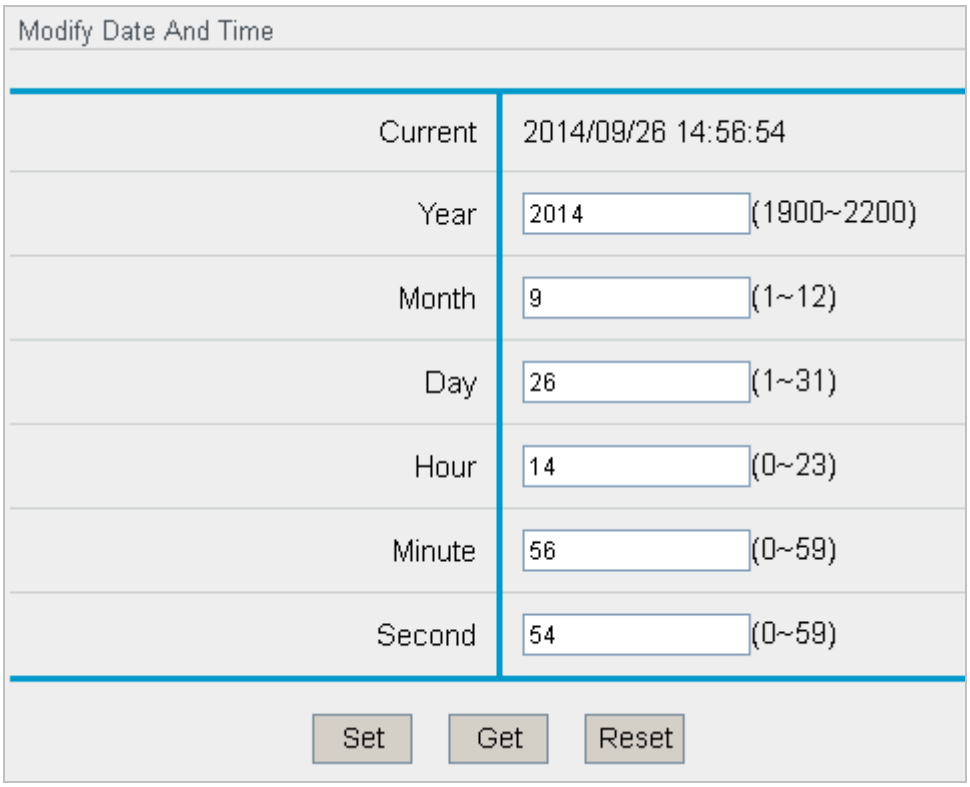


Figure 4-8-3: Modify Date and Time Page Screenshot

The page includes the following fields:

Object	Description
• **Current**	Show you the current date and time.
• **Year**	Allows user to configure year. It could be set from 1900 to 2200.
• **Month**	Allows user to configure month. It could be set from 1 to 12.
• **Day**	Allows user to configure day. It could be set from 1 to 31.
• **Hour**	Allows user to configure hour. It could be set from 0 to 23.
• **Minute**	Allows user to configure minutes. It could be set from 0 to 59.
• **Second**	Allows user to configure second. It could be set from 0 to 59.

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

4.8.4 Temperature Threshold

This section is to introduce you about how to configure temperature threshold. The screen in Figure 4-8-4 appears.

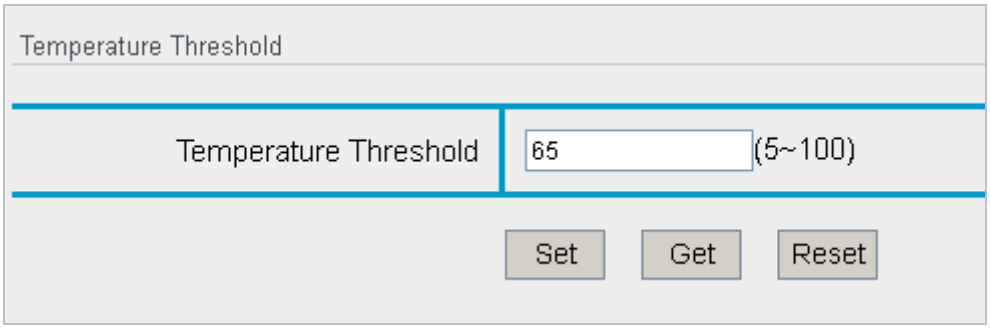


Figure 4-8-4: Modify Date and Time Page Screenshot

The page includes the following fields:

Object	Description
• **Temperature Threshold**	Allows user to set temperature threshold. If the system temperature has reached or exceeded the threshold value, it will alarm.

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

4.8.5 Save Configuration

The save configuration doesn't have the configuration page. You just need to click it from the menu tree. When user applies save configuration, the configuration will be saved to flash memory. If user doesn't save configuration then it will be lost after the system starts to reboot. The screen in Figure 4-8-5 appears.

Figure 4-8-5: Save Configuration Page Screenshot

4.8.6 System Reboot

This section is to introduce you about how to configure system reboot. The screen in Figure 4-8-6 appears.

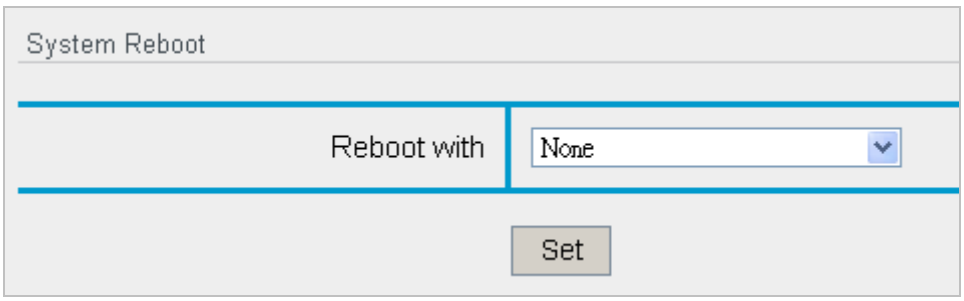


Figure 4-8-6: System Reboot Page Screenshot

The page includes the following fields:

Object	Description
• **Reboot with**	Allows user to set 4 reboot types. **None**: system reboots only. **Save Configuration**: System save configuration first, then reboot. **Factory Default**: System reboots and makes factory default reset. **Factory Default without Network**: System reboot is set to factory default.

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

4.8.7 Location Information

This section is to introduce you about how to configure location information. This is for user to fill out related information for identifying this device that is used for the project, site or wherever it is putted, etc. The screen in Figure 4-8-7 appears.

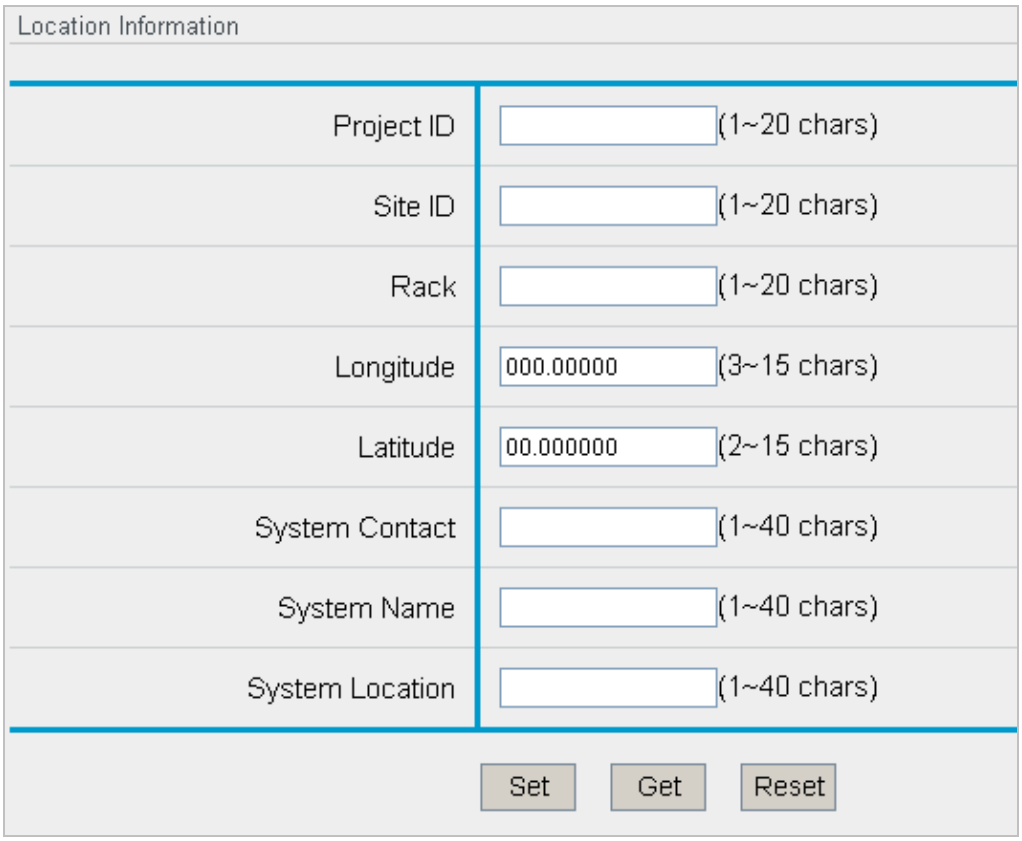


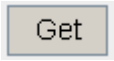
Figure 4-8-7: Location Information Page Screenshot

The page includes the following fields:

Object	Description
• **Project ID**	Allows user to set project name. (1~20 characters)
• **Site ID**	Allows user to set site name. (1~20 characters)
• **Rack**	Allows user to set rack name. (1~20 characters)
• **Longitude**	Allows user to set longitude. (3~15 characters)
• **Latitude**	Allows user to set latitude. (2~15 characters)
• **System Contact**	Allows user to set system contact person name. (1~40 characters)
• **System Name**	Allows user to set system name. (1~40 characters)
• **System Location**	Allows user to set location name. (1~40 characters)

Button

: Save configuration.



: Click to undo any changes made locally and revert to previously saved values.

: Click to reset IP address to default setting.

4.8.8 Line Identifier

This section is to introduce you about how to configure line identifier. The screen in Figure 4-8-8 appears.

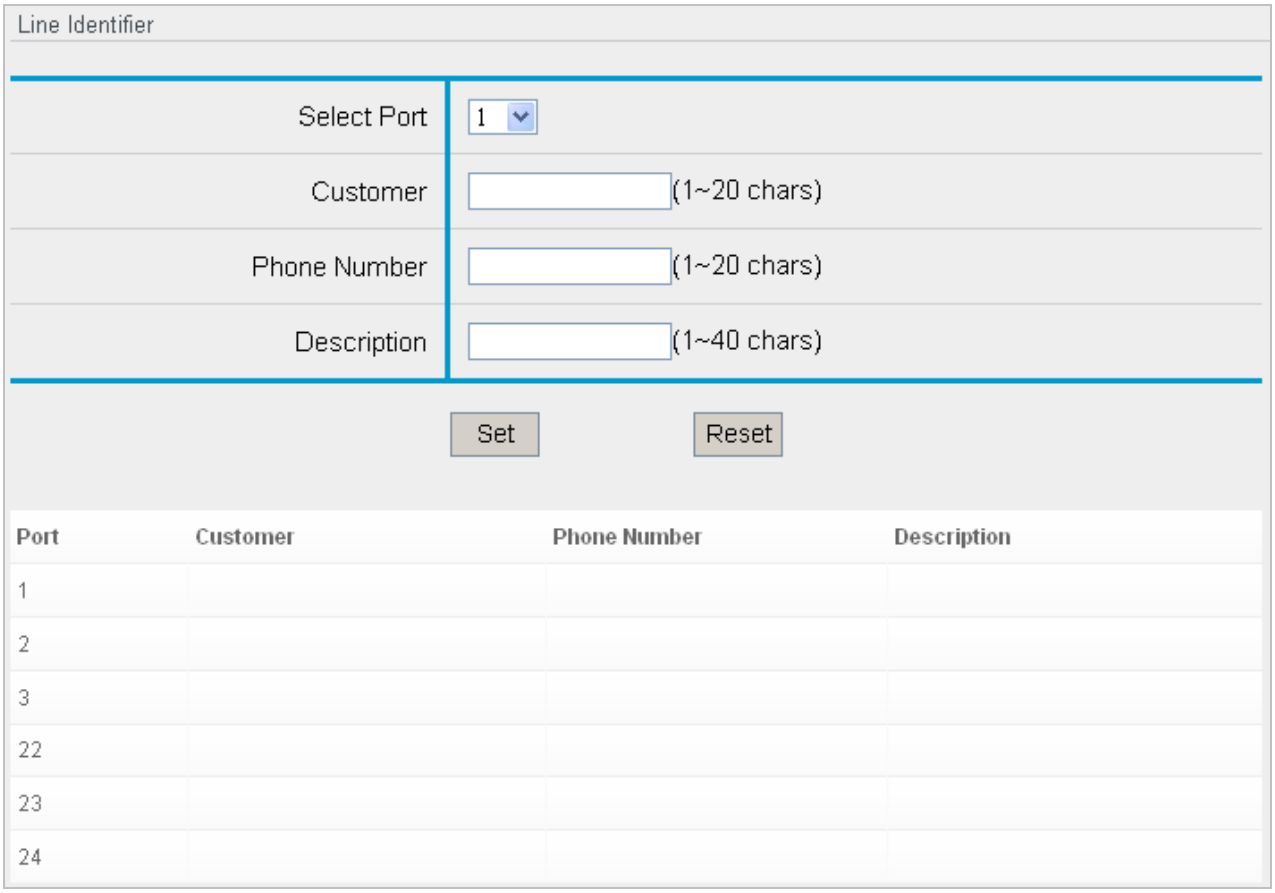


Figure 4-8-8: Line Identifier Page Screenshot

The page includes the following fields:

Object	Description
• **Select Port**	Allows user to indicate xDSL port for identifying.
• **Customer**	Allows user to set customer name for the xDSL line.
• **Phone Number**	Allows user to set customer's phone number for the xDSL line.
• **Description**	Allows user to set extra description for the line.

Button

Set: Save configuration.

Reset: Click to reset IP address to default setting.

4.8.9 Backup and Restore

This section is to introduce you about how to back up and restore configuration. The screen in Figure 4-8-9 appears.

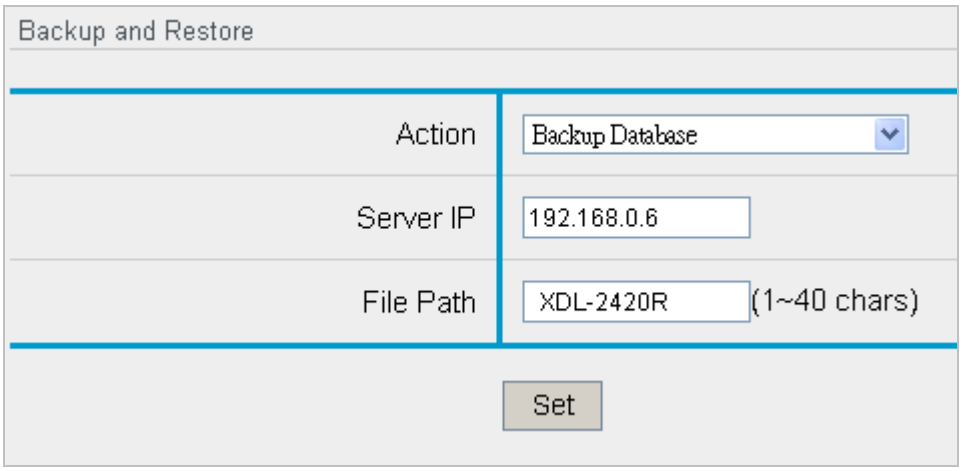


Figure 4-8-9: Backup and Restore Page Screenshot

The page includes the following fields:

Object	Description
• **Action**	Allow user to different action types. **Backup Database**: It means backing up all configurations. **Restore Database All**: It means restoring configuration to the XDL-2420R. **Restore Database without Network**: It means restoring configuration to this device except network setting. **Backup System Log**: Allows user to back up system log.
• **Server IP**	Allows user to set TFTP server IP address.
• **File Path**	Allows user to input file name and file path.

Button

Set: Save configuration.

4.8.10 User Management

This section is to introduce you about how to configure user management. This feature allows user to add user account only.

The screen in Figure 4-8-10 appears.

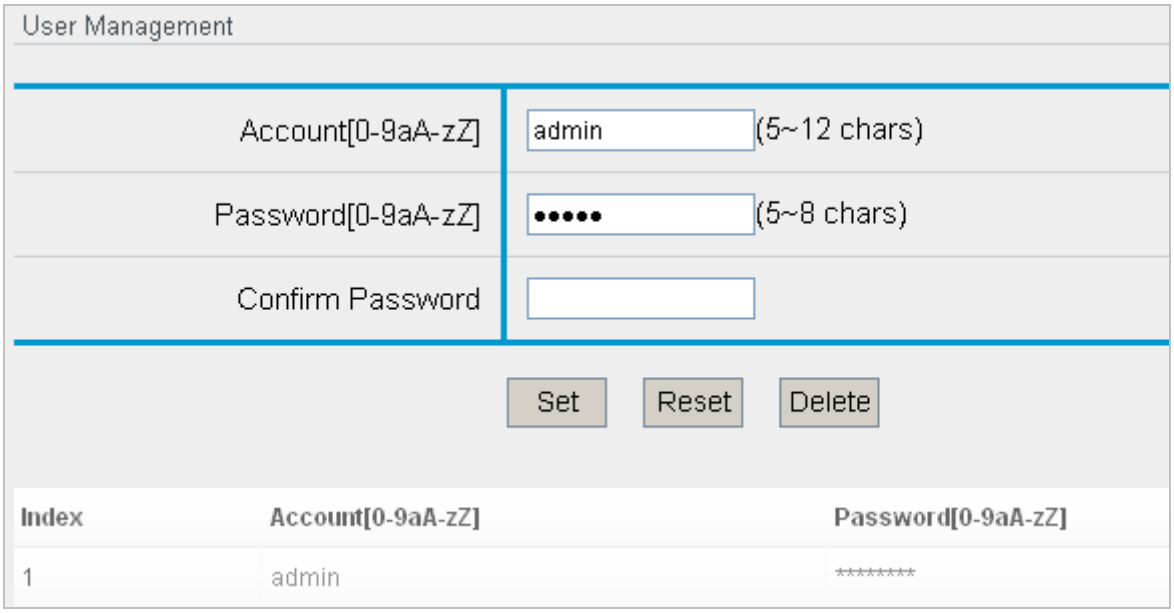


Figure 4-8-10: User Management Page Screenshot

The page includes the following fields:

Object	Description
• **Account [0-9aA-zZ]**	Allows user to set a user account name. (5-12 characters)
• **Password [0-9 aA-zA]**	Allows user to set password. (5-8 characters)
• **Confirm Password**	Allows user to input password again to confirm the password is correct.

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

4.8.11 Out-of-Band Management

This section is to introduce you about how to configure out-of-band management. This network configuration page is for you to connect to **EMS** port and manage this device. You can't manage this device from GE port or alarm IN/OUT port. The screen in Figure 4-8-11 appears.

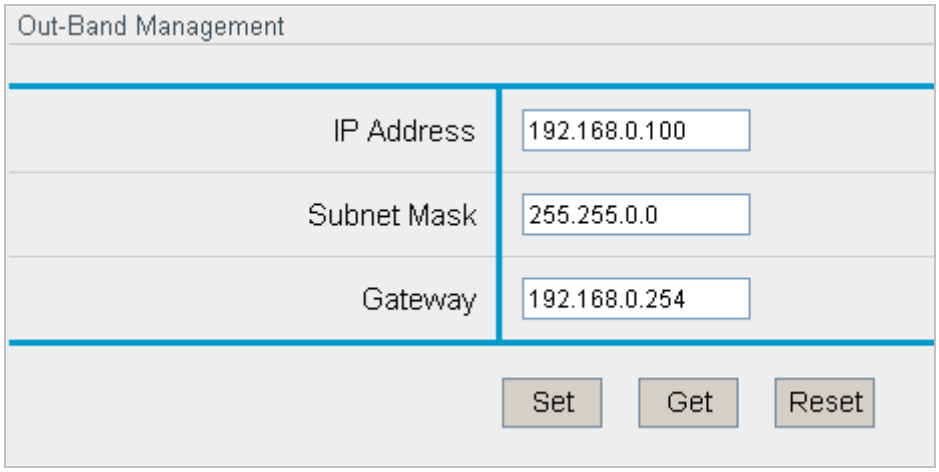


Figure 4-8-11: Out-of-Band Management Page Screenshot

The page includes the following fields:

Object	Description
• **IP Address**	Allows user to set IP address. It supports IPv4 only.
• **Subnet Mask**	Allows user to set subnet mask.
• **Gateway**	Allows user to set gateway IP address.

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

4.8.12 Remote Management

This section is to introduce you about how to configure remote management. It offers you to enable SNMP or WEB GUI for management. For security reason, user may need to change standard TCP port number from 80 (for HTTP service) or 161 (for SNMP service) to the other port. The SNMP MIBs support XDL-2420R private MIB only and it offers user to monitor VDSL line status. The screen in Figure 4-8-12 appears.

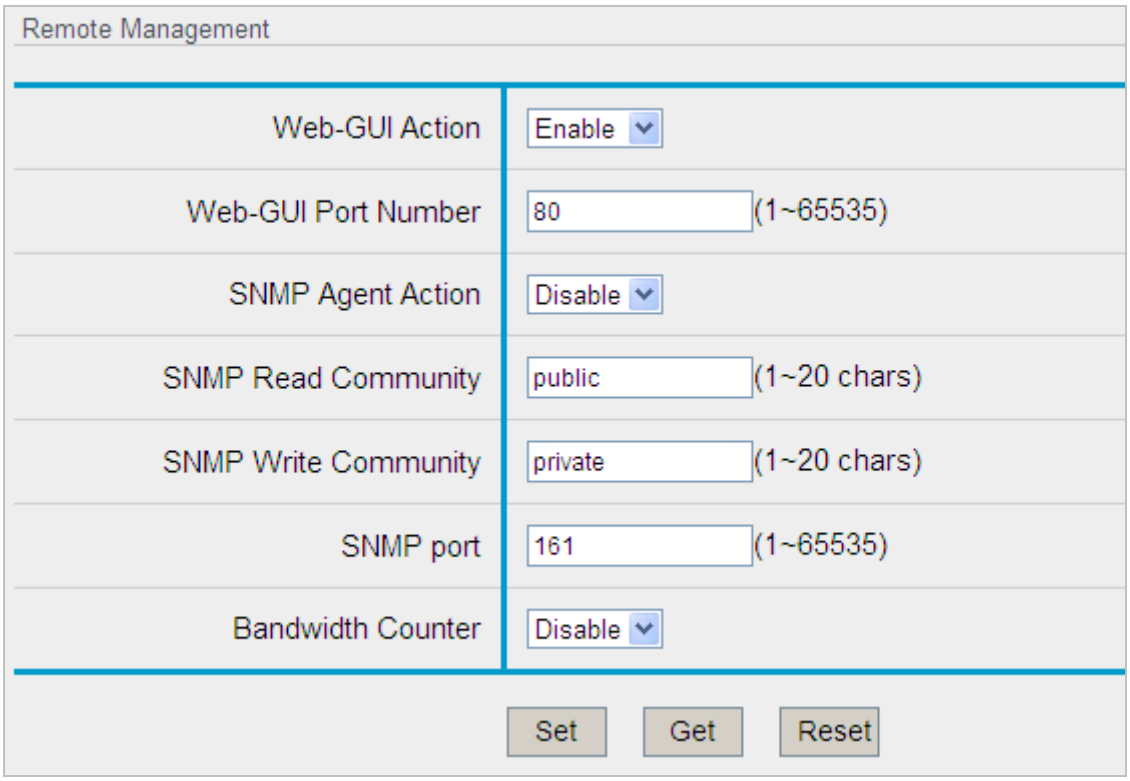


Figure 4-8-12: Out-of-Band Management Page Screenshot

The page includes the following fields:

Object	Description
• **WEB-GUI Action**	Allows user to disable or enable web GUI. **Default**: Enable
• **WEB-GUI Port Number**	Allows user to set web GUI (HTTP service) port number. **Default**: 80
• **SNMP Agent Action**	Allows user to enable or disable SNMP service. **Default:** disabled.
• **SNMP Read Community**	Allows user to set SNMP read community name. **Default:** “public”.
• **SNMP Write Community**	Allows user to set SNMP write community name. **Default:** “private”.
• **SNMP Port**	Allows user to set UDP port number. **Default:** 161.
• **Bandwidth Counter**	Allows user to enable or disable xDSL port bandwidth counter. **Default:** disable. User can check result from “Statistics/xDSL Port Bandwidth”

Button

Set: Save configuration.

Get: Click to undo any changes made locally and revert to previously saved values.

Reset: Click to reset IP address to default setting.

4.8.13 Trap Server

This section is to introduce you about how to configure SNMP trap server address and community name. This feature offers 5 trap server configuration groups for user to distribute SNMP trap message to different locations. The screen in Figure 4-8-13 appears.

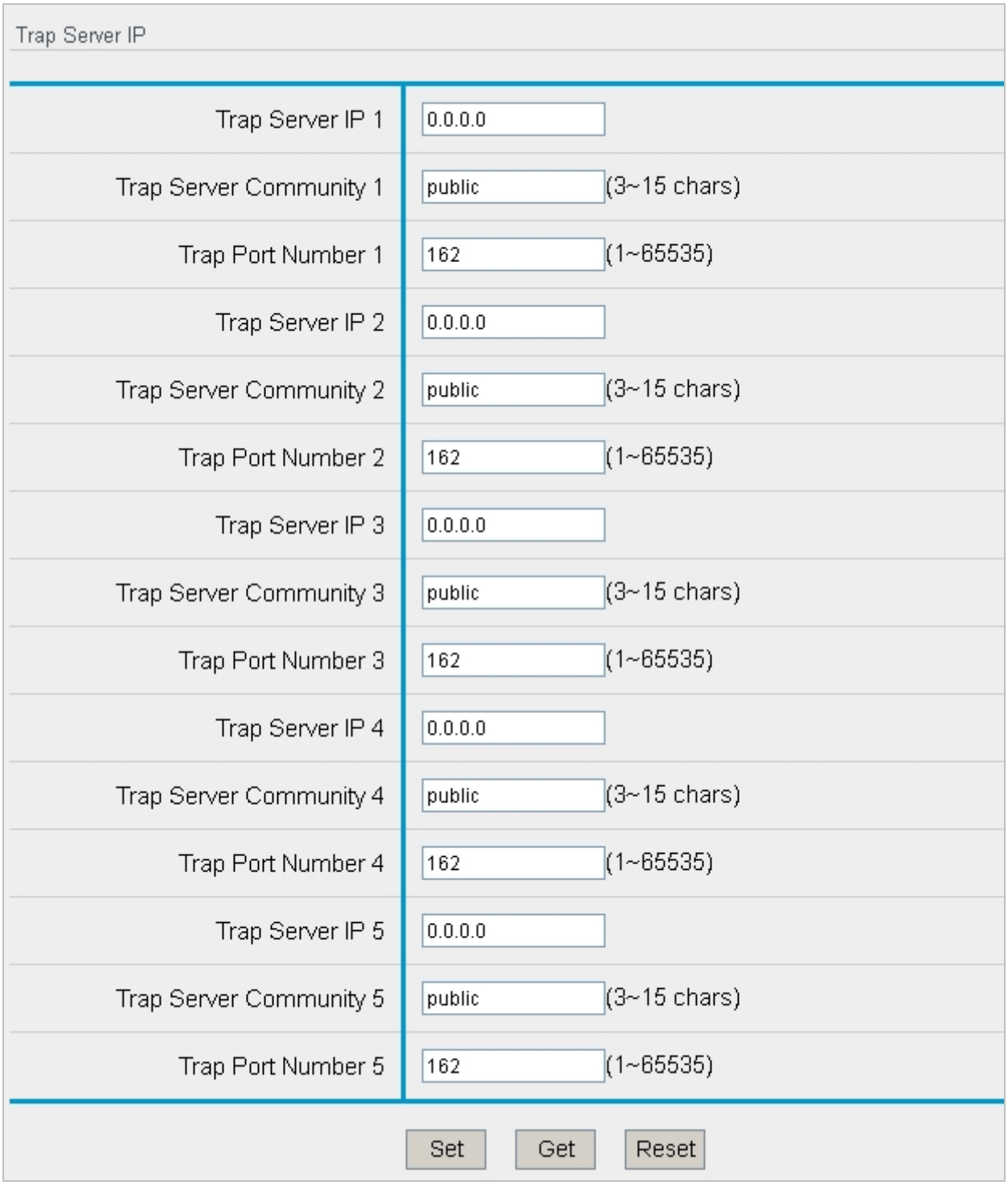


Figure 4-8-13: Trap Server Page Screenshot

The page includes the following fields:

Object	Description
• **Trap Server IP 1**	Allows user to set the 1st SNMP trap server IP address.
• **Trap Server Community 1**	Allows user to set the 1st SNMP trap server community name.
• **Trap Port Number 1**	Allows user to set the 1st SNMP trap service port number.
• **Trap Server IP 2**	Allows user to set the 2nd SNMP trap server IP address.
• **Trap Server Community 2**	Allows user to set the 2nd SNMP trap server community name.
• **Trap Port Number 2**	Allows user to set the 2nd SNMP trap service port number.
• **Trap Server IP 3**	Allows user to set the 3rd SNMP trap server IP address.
• **Trap Server Community 3**	Allows user to set the 3rd SNMP trap server community name.
• **Trap Port Number 3**	Allows user to set the 3rd SNMP trap service port number.
• **Trap Server IP 4**	Allows user to set the 4th SNMP trap server IP address.
• **Trap Server Community 4**	Allows user to set the 4th SNMP trap server community name.
• **Trap Port Number 4**	Allows user to set the 4th SNMP trap service port number.
• **Trap Server IP 5**	Allows user to set the 5th SNMP trap server IP address.
• **Trap Server Community 5**	Allows user to set the 5th SNMP trap server community name.
• **Trap Port Number 5**	Allows user to set the 5th SNMP trap service port number.

Button

: Save configuration.

: Click to undo any changes made locally and revert to previously saved values.

: Click to reset IP address to default setting.

5. TROUBLESHOOTING

This chapter contains information to help you solve issues. If the DSLAM is not functioning properly, make sure the DSLAM is set up according to instructions in this manual.

5.1 The link LED is not lit up

Solution:

Check the cable connection and make sure the xDSL port has been activated.

5.2 Some station cannot be accessed to each other via GE2 port

Solution:

Please login to the XDL-2420R and click “Uplink Application Mode” and set “Mode” to “Daisy” then GE1 and GE2 could be switching.

5.3 xDSL Performance is bad

Solution:

Try to change VDSL or ADSL band plan or profile for xDSL device.

Enabling power back off for ADSL2+ mode or VDSL2 mode.

5.4 Why the DSLAM doesn’t connect to the network

Solution:

1. Check the LNK/ACT LED on the DSLAM
2. Try another port on the DSLAM
3. Make sure the cable is installed properly
4. Make sure the cable is the right type
5. Turn off the power. After a while, turn on the power again

5.5 1000BASE-T port link LED is lit, but the traffic is irregular

Solution:

Check that the attached device is not set to dedicated full duplex.

5.6 DSLAM does not power up

Solution:

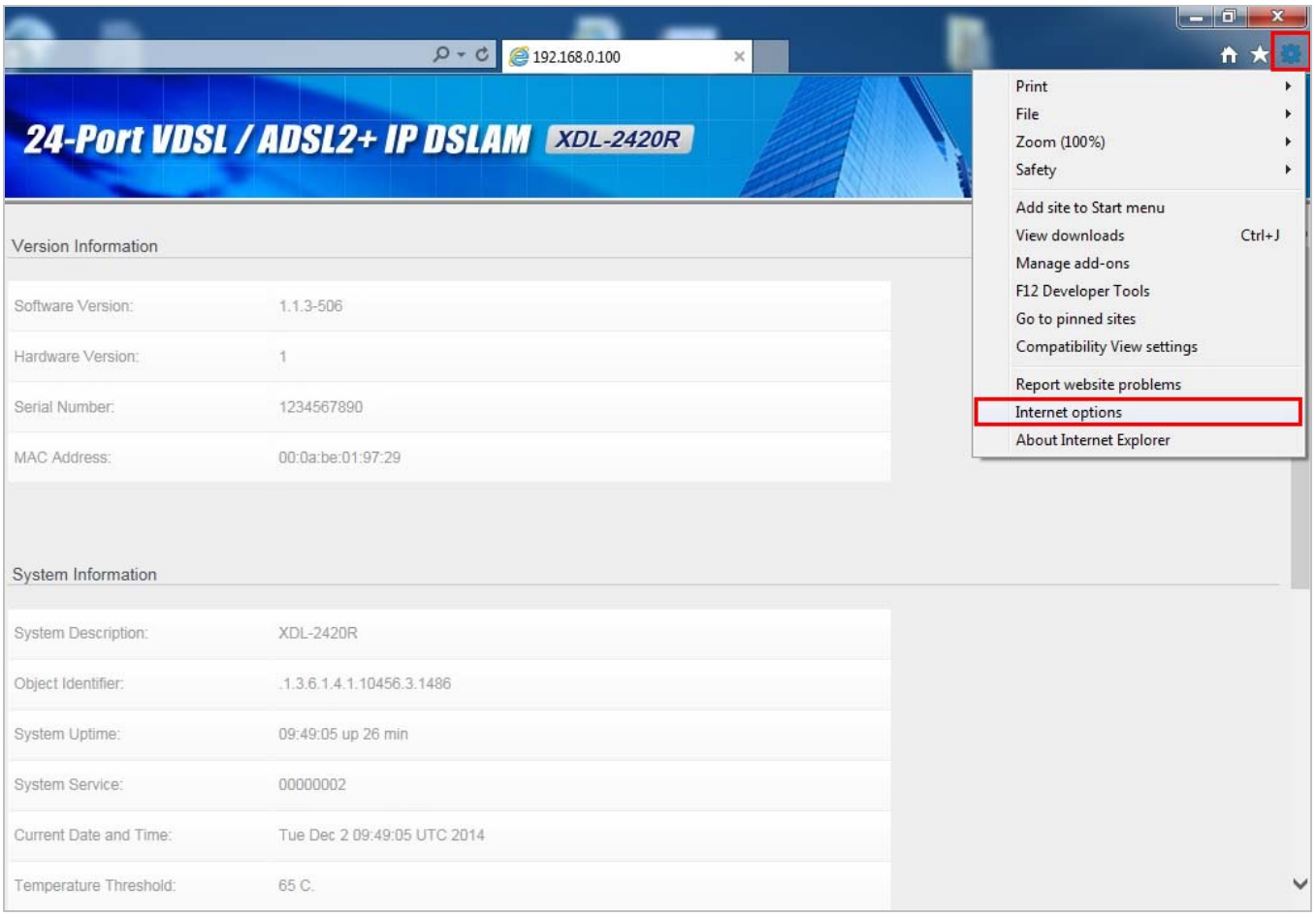
1. AC/DC power cord is not inserted or faulty
2. Check whether the AC/DC power cord/DC cable wire is inserted correctly
3. Replace the power cord if the cord is inserted correctly; check whether the AC/DC power source is working by connecting a different device in place of the DSLAM.
4. If that device works, refer to the next step.
5. If that device does not work, check the AC/DC power

5.7 Microsoft Internet Explorer browser compatibility issue

If user has encountered WEB browser compatibility issue such as "Save Configuration" option works one time only after reboot, please set up your internet explorer browser as following.

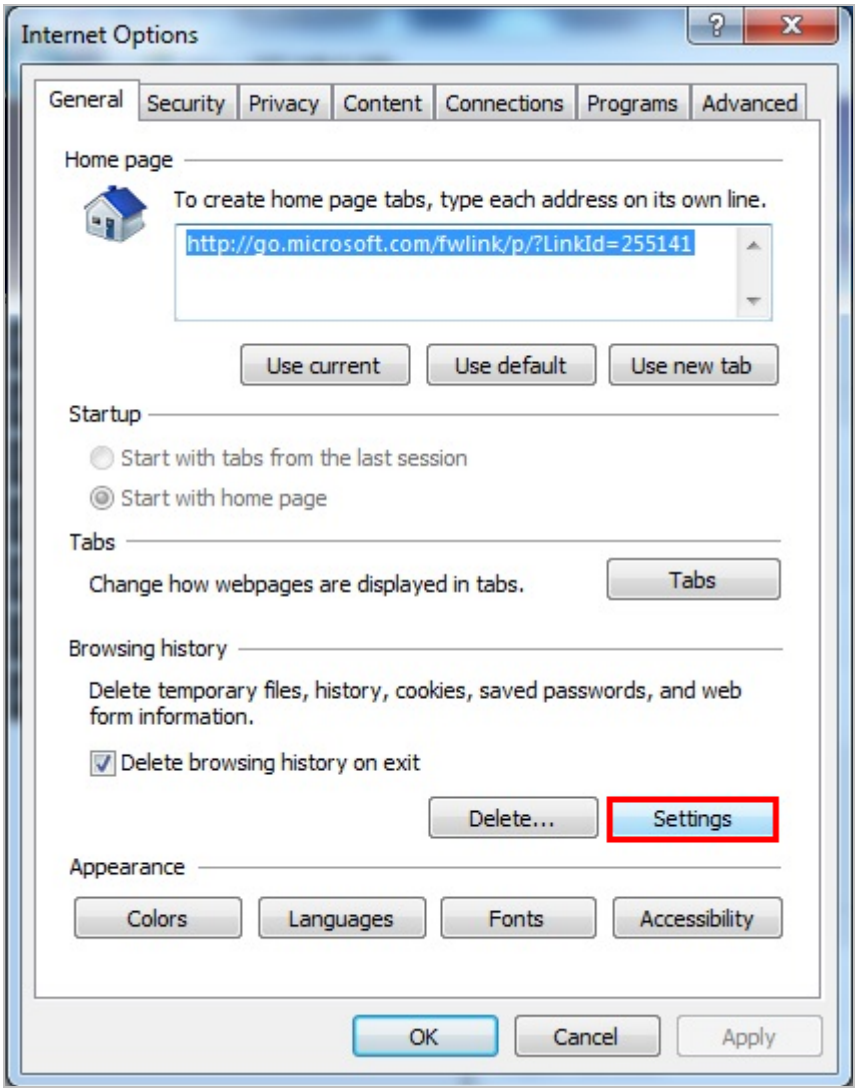
[Setp1.]

Click "Internet Options" to setup your web browser.



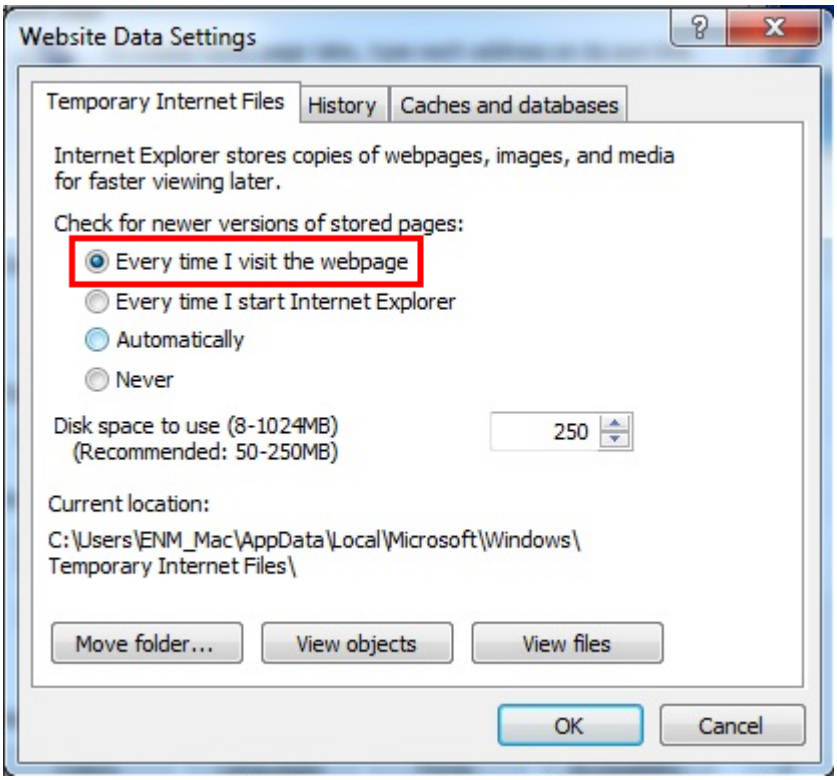
[Setp2]

Please click “Setting” button from “Browsing history”.



[Step3]

Changing option from “Automatically” to “Every time I visit the webpage” and then click “OK” button. Re-open the web browser.



6. Appendix

6.1 RJ21 xDSL Connector Port Mapping

The female RJ21 subscriber connectors are located on the front of the XDL-2420R. Table 6-1 indicates xDSL (LINE) and Phone (POTS) connectors correspond to ports on xDSL.

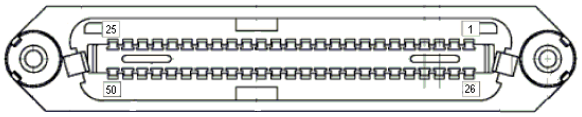


Figure 6-1 RJ21 Connector

Table 6-1 RJ21 Connector Pin Assignment

Phone 1~24			
Pin			
1	POTS_Tip1	26	POTS_Ring1
2	POTS_Tip2	27	POTS_Ring2
3	POTS_Tip3	28	POTS_Ring3
4	POTS_Tip4	29	POTS_Ring4
5	POTS_Tip5	30	POTS_Ring5
6	POTS_Tip6	31	POTS_Ring6
7	POTS_Tip7	32	POTS_Ring7
8	POTS_Tip8	33	POTS_Ring8
9	POTS_Tip9	34	POTS_Ring9
10	POTS_Tip10	35	POTS_Ring10
11	POTS_Tip11	36	POTS_Ring11
12	POTS_Tip12	37	POTS_Ring12
13	POTS_Tip13	38	POTS_Ring13
14	POTS_Tip14	39	POTS_Ring14
15	POTS_Tip15	40	POTS_Ring15
16	POTS_Tip16	41	POTS_Ring16
17	POTS_Tip17	42	POTS_Ring17
18	POTS_Tip18	43	POTS_Ring18
19	POTS_Tip19	44	POTS_Ring19
20	POTS_Tip20	45	POTS_Ring20
21	POTS_Tip21	46	POTS_Ring21
22	POTS_Tip22	47	POTS_Ring22
23	POTS_Tip23	48	POTS_Ring23
24	POTS_Tip24	49	POTS_Ring24
25	FGND	50	FGND

Line 1~24			
Pin			
1	LINE_Tip1	26	LINE_Ring1
2	LINE_Tip2	27	LINE_Ring2
3	LINE_Tip3	28	LINE_Ring3
4	LINE_Tip4	29	LINE_Ring4
5	LINE_Tip5	30	LINE_Ring5
6	LINE_Tip6	31	LINE_Ring6
7	LINE_Tip7	32	LINE_Ring7
8	LINE_Tip8	33	LINE_Ring8
9	LINE_Tip9	34	LINE_Ring9
10	LINE_Tip10	35	LINE_Ring10
11	LINE_Tip11	36	LINE_Ring11
12	LINE_Tip12	37	LINE_Ring12
13	LINE_Tip13	38	LINE_Ring13
14	LINE_Tip14	39	LINE_Ring14
15	LINE_Tip15	40	LINE_Ring15
16	LINE_Tip16	41	LINE_Ring16
17	LINE_Tip17	42	LINE_Ring17
18	LINE_Tip18	43	LINE_Ring18
19	LINE_Tip19	44	LINE_Ring19
20	LINE_Tip20	45	LINE_Ring20
21	LINE_Tip21	46	LINE_Ring21
22	LINE_Tip22	47	LINE_Ring22
23	LINE_Tip23	48	LINE_Ring23
24	LINE_Tip24	49	LINE_Ring24
25	FGND	50	FGND

6.2 Standard Telco Color Chart

Table 6-2 indicates the reference colors that are used for the IP-DSLAM system cables.

Table 6-2 RJ21 Cable Color Chart Mapping Table

Wire Color	P1	Wire Color	P2	Wire Color	P1	Wire Color	P2
WHT/BLU	1	WHT/BLU	1	GRN/BLK	38	GRN/BLK	38
BLU/WHT	26	BLU/WHT	26	BLK/BRN	14	BLK/BRN	14
WHT/ORG	2	WHT/ORG	2	BRN/BLK	39	BRN/BLK	39
ORG/WHT	27	ORG/WHT	27	BLK/GRY	15	BLK/GRY	15
WHT/GRN	3	WHT/GRN	3	GRY/BLK	40	GRY/BLK	40
GRN/WHT	28	GRN/WHT	28	YEL/BLU	16	YEL/BLU	16
WHT/BRN	4	WHT/BRN	4	BLU/YEL	41	BLU/YEL	41
BRN/WHT	29	BRN/WHT	29	YEL/ORG	17	YEL/ORG	17
WHT/GRY	5	WHT/GRY	5	ORG/YEL	42	ORG/YEL	42
GRY/WHT	30	GRY/WHT	30	YEL/GRN	18	YEL/GRN	18
RED/BLU	6	RED/BLU	6	GRN/YEL	43	GRN/YEL	43
BLU/RED	31	BLU/RED	31	YEL/BRN	19	YEL/BRN	19
RED/ORG	7	RED/ORG	7	BRN/YEL	44	BRN/YEL	44
ORG/RED	32	ORG/RED	32	YEL/GRY	20	YEL/GRY	20
RED/GRN	8	RED/GRN	8	GRY/YEL	45	GRY/YEL	45
GRN/RED	33	GRN/RED	33	VIO/BLU	21	VIO/BLU	21
RED/BRN	9	RED/BRN	9	BLU/VIO	46	BLU/VIO	46
BRN/RED	34	BRN/RED	34	VIO/ORG	22	VIO/ORG	22
RED/GRY	10	RED/GRY	10	ORG/VIO	47	ORG/VIO	47
GRY/RED	35	GRY/RED	35	VIO/GRN	23	VIO/GRN	23
BLK/BLU	11	BLK/BLU	11	GRN/VIO	48	GRN/VIO	48
BLU/BLK	36	BLU/BLK	36	VIO/BRN	24	VIO/BRN	24
BLK/ORG	12	BLK/ORG	12	BRN/VIO	49	BRN/VIO	49
ORG/BLK	37	ORG/BLK	37	VIO/GRY	25	VIO/GRY	25
BLK/GRN	13	BLK/GRN	13	GRY/VIO	50	GRY/VIO	50

6.3 Pin-outs of Local Console DB-9 Connector

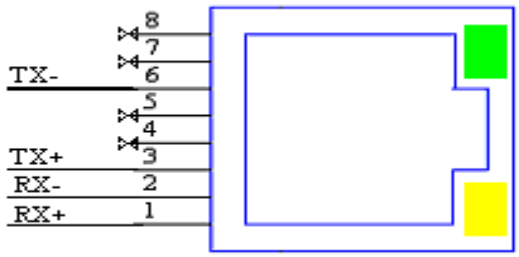
Female DB-9 connector on the XDL-2420R system is used for console management, a female DB-9 connector is used to connect PC's COM port. Table 6-3 indicates the pin assignment of female DB-9 local console interface.

The attribute of DB-9 connector is RS-232 DCE interface.

Table 6-3 Female DB-9 Connector Pin Assignments

Pin	Description
1	None
2	Tx
3	Rx
4	None
5	GND
6	None
7	None
8	None
9	None

6.4 Pin-outs of EMS Local Console



Note:

- Green LED Blinking: Receiving packets
- Yellow LED Blinking: Transmitting packets

Figure 6-2 RJ45 Connector