Proscend 101 VDSL2 Bridge with 4-Port Ethernet

User Manual

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Chapter 1 Introduction

Proscend 101 VDSL2 Bridge is a long reach Ethernet extender with four Ethernet ports and two phone jacks, in which one is for VDSL2 connection and the other is for POTS (Plain Old Telephone Service) connection. It has built-in POTS splitter to share the existing phone line with POTS eliminating the need for replacing the existing copper wiring. It is ideal for use as an Ethernet extender to an existing Ethernet network.

Well accommodating VDSL2 (Very-high-data-rate Digital Subscribe Loop) technology to extend Ethernet service over single-pair phone line, Proscend 101 VDSL2 can reach up to 100/75 Mbps bandwidth (line rate) within 300M or 40/10 Mbps bandwidth (line rate) for 1 Km long-range connections. By providing ultra-high speed, Proscend 101 VDSL2 Bridge makes your telephone line achieve its best performance ever. It has the advantage of minimum installation time (simply as plug-n-play) and minimum expense by allowing video streaming and data to share the same telephone pair without interference.

Proscend 101 VDSL2 Bridge delivers everything needed to quickly deploy a high-speed IP-based network for providing high-speed Internet access, video-on demand services and voice services. The resulting compact, cost-effective form factor offers systems integrators, small business owners an attractive long reach Ethernet solution.

1.1 Features

- Cost effective bridge function to connect two Ethernet LAN
- Easy installation via simple plug-and-play
- Selectable CPE and CO mode:
 - Two working modes are built in the same unit, which keep the flexibility of installation and easy provision of service but lower inventory of service provider.
- Selectable fast and interleaved mode:
 - Fast mode guarantees a minimum end to end latency less than 1 mS.
 - Interleaved mode provides impulse noises protection for any impulse noise with duration less than 250uS. Interleaved mode has a maximum end to end latency of 10mS.
- Selectable target band plan:
 - VDSL2 defines multiple band plans and configuration modes to allow asymmetric and symmetric services in same binder for data transmission.
 - Symmetric is selected that provides better downstream performance.
 Asymmetric is selected that provides better upstream performance.

• Selectable target SNR margin:

It has the ability to select fixed SNR margin value on 9 dB or 6db. The systems will maintain the SNR margin at their value across all usable loop length. The higher SNR value gets better line quality, but lower performance.

1.2 Specification

VDSL2 standards Compliant with ITU VDSL2 standard G.993.2 Annex A, Annex B and Annex C Support VDSL2 profile: 8a, 8b, 8c, 8d, 12a, 12b and 17a • Band plan profile: symmetric (Plan 997) and asymmetric (Plan 998) Support fast and interleaved mode • Target SNR Margin: 6dB and 9dB Built-in POTS splitter to share voice and data Management Web-based GUI for quick setup, configuration and management Firmware upgradable from Web LAN Filtering functions for MAC/IP/Port. QoS for Port/VLAN/DSCP/TCP-UDP Port number. Port Based VLAN & IEEE 802.1q VLAN Tagging Port configuration for Bandwidth/Duplex/Speed/Flow control/Broadcast storm. **Connections** Four RJ-45 connectors for Ethernet 10/100Mbps ports with auto MDX/MDIX One RJ-11 connectors for VDSL2 port, One RJ-11 connection for POTS connection Indicators General : PWR and SYS WAN(VDSL2) : CO, CPE, LINK and ALM

• LAN (Ethernet) : 1,2,3,4 LNK/ ACT

Physical/Electrical

- Power: 100~240VAC (via power adapter)
- Power consumption: 9 watts maximum.
- Temperature: 0~45°C
- Humidity: 0%~95%RH (non-condensing)

1.3 Applications

VDSL2 Bridge Application



Chapter 2 Hardware Installation

This chapter shows the front panel and how to install the hardware.

2.1 Front Panel

Please see the graphic below for the front panel:

Front panel can be separated into six parts from left to right:

- (1) Power
- (2) System
- (3) Central Office
- (4) Customer Premises Equipment
- (5) Link
- (6) Alarm

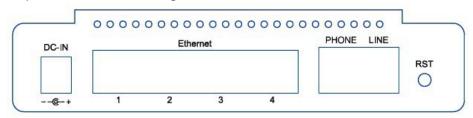
VDSL2				
PWR	SYS	Oco	CPE	ALM

LED Status of VDSL2 Bridge:

	*	•	0
	Blinking	On	Off
PWR		Power On	Power Off
SYS	System Activated	System Failed	
СО		CO Mode On	
CPE		CPE Mode On	
LINK	Activity Slow: Start Connection Fast: Data Transmit	Connected	
ALM		Connection Error	

2.2 Real Panel

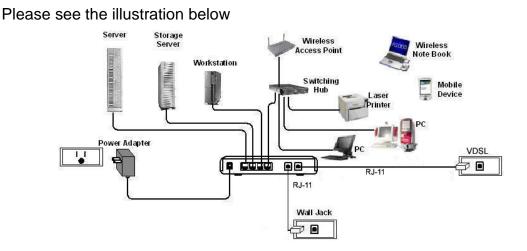
The rear panel of VDSL2 bridge is where all of the connections are made.



Connectors Description of VDSL2 Bridge

DC-IN	Power adaptor inlet: Input voltage 12VDC
Ethernet (1,2,3,4)	Four Ethernet10/100BaseT auto-sensing and auto-MDI/MDIX for
	Ethernet ports(RJ-45)
PHONE	This interface is for connecting phone line (RJ-11).
LINE	VDSL2 interface for WAN port (RJ-11).
RST	The reset button, the button restore the default setting when press this
	button until reboot

2.3 Installation



Chapter 3 Configuration via Web Browser

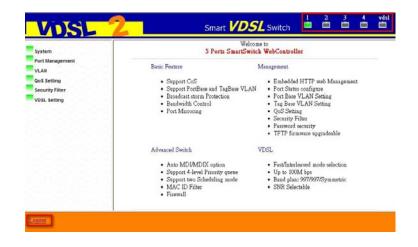
3.1 5 Ports Smart Switch Web Controller Login

There is no software required to install in order to access your web controller, and all you need is a browser. To login your management system, please open any browser, such as, Internet Explore, Firefox, etc., and go to "<u>http://192.168.1.1</u>" (If you had changed the IP address, please login into the modified IP address).

Once you connect to your VDSL2 Bridge, you will be able to see a login page, please check the following figure, and then, login into the system with your user name and password. (Note: the default user name is "admin" and the corresponding password is "admin".)

JSER	LOG IN
Site:	192.168.1.1
ID:	admin
Password:	•••••
	ок

After you complete the login process, a main page will be shown as the following photograph. In this page, there are five square icons on the top-right side to show current port status. In addition, you can explore more management options on the left-hand side. Click on management options in order to manage your VDSL2 Bridge. Please check the following sections for more information on how to work with your VDSL2 Bridge.



3.2 System

3.2.1 Authentication Configuration

stem IP Configuration stem Status		Materia
	Setting	Value
.oad default setting	Username	admin max:15
Firmware Upgrade		
Reset Device	Password	••••• max:15
Config Backup/Restore	Confirm	•••••
Port Management	-	Update
VLAN		
QoS Setting	Note:	
Security Filter		
VDSL Setting	Username & Password	l can only use "a-z", "A-Z", "0-9", "_", "+", "-", "=".

You can change login name and password in this page. After accomplish your modification, please press "Update" button to save the change.

3.2.2 System IP Configuration

entication Configuration em IP Configuration		
stem Status	Setting	Value
ad default setting mware Upgrade	IP Address	192 . 168 . 1 . 1
Reset Device	Subnet Mask	255 _ 255 _ 255 _ 0
Config Backup/Restore	Gateway	192 . 168 . 1 . 253
Port Management		Update
LAN		
oS Setting		
Security Filter		

"System IP Configuration" shows IP configuration, such as, IP address, subnet mask and gateway. In addition, you can change these settings in this page. (Note: please remember login this web controller with the IP address you saved!)

3.2.3 System Status

system Sys	tem Status	
Authentication Configuration		
System IP Configuration		
System Status MAC	C Address	00:03:79:FF:FF:05
oad default setting Num	ber of Ports	4 Lan Port + 1 Vdsl
Firmware Upgrade		
Reset Device Com	ment	VDSL2
Config Backup/Restore Syste	em Version	Proscend Smart VDSL Switch Ver 2.0 2010-0615
ort Management		Update
/LAN		- Prove
Note:		
ecurity Filter		
DSL Setting Comm	nent name can only	7 use "a-z","A-Z","_","+","-","=".

"System Status" allow you to review hardware information and software version of your VDSL2 Bridge. "Update" button saves the information you provide in

"Comment" field.

3.2.4 Load Default Setting

System	Load Default Setting	
Authentication Configuration		
System IP Configuration		
System Status		
Load default setting		
Firmware Upgrade	Load Default Setting to EEPROM	Reserved IP O All
Reset Device	Load	
Config Backup/Restore		
ort Management		
LAN		
QoS Setting		
Security Filter		

"Load Default Setting" provides two methods to restore your VDSL2 Bridge's information. 1. "Reserved IP": this allows you to reload the default factory settings without changing your IP address.

2. "All": this means all setups will be restored to the original settings including IP address. Once you make your choice, please click on "Load" button to activate this option.

3.2.5 Firmware Upgrade

System	Firmware Upgrade
Authentication Configuration	Please key in the password twice.
System IP Configuration	riease key ili ule password twice.
System Status	Password
Load default setting	ReConfirm
Firmware Upgrade	Upgrade
Reset Device	- I - France
	To ease when in contains an in resultions areas
Config Backup/Restore	Note: Make cure was understand the procedurese to ungrade the firmware before click ung
Config Backup/Restore Port Management	Note: Make sure you understand the proceduress to upgrade the firmware before click upg call help.!!
Port Management VLAN	

You will be able to update your VDSL2 Bridge's firmware in this page. Please request the password from Proscend if you need to upgrade VDSL2 Bridge's firmware.

3.2.6 Reset Device

System	2
Authentication Configuration	2-0
System IP Configuration	- 6-
System Status	
Load default setting	
Firmware Upgrade	
Reset Device	
Config Backup/Restore	- 2-
Port Management	
VLAN	
QoS Setting	- 2-
Security Filter	
VDSL Setting	-0-

Reset Device: Click "Confirm" to Reset the Device Confirm This page provides a way to restart your VDSL2 Bridge without turn off and on your VDSL2 Bridge's power. Click on "Confirm" in order to restart your VDSL2 Bridge.

3.2.7 Config Backup/ Restore

System	Configuration Backup/Recovery
Authentication Configuration System IP Configuration System Status	Backup(Switch→PC)
Load default setting	Please check "Download" to download EEPROM contents. Download
Firmware Upgrade	
Reset Device	
Config Backup/Restore	>
Port Management	Recovery(PC→Switch)
VLAN	Select the image file :
QoS Setting	
Security Filter	
	Password: Update

For backup option, click on "Download" and a file explore will be popped up. Then, choose the location you wish to store this backup file.

In order to recovery your VDSL2 Bridge, click on "Browse" button to choose which file to restore from, and then, please key in your password and click on "Update" to start restore process.

3.3 Port Management

3.3.1 **Port Configuration**

Port Configuration Now Control Setting Port Mirroring	Function	Auto Negotiation	Speed	Duplex	Fran Forwar		Learning Capability	
andwidth Control	, unour	Enable 💙	10M 💌	Full 🗸	Enable	~	Enable 💌	
roadcast Storm Control RC Counter	Select Por NO.	t		1 2 🗆 3 🗆 4				
LAN				Submit				
oS Setting	-							
ecurity Filter	-							
curity Filter		(1		Cottin - Cast		
Current Port	Port No.	Current St Link Speed	atus Duplex	Auto Negotiation	Speed	Setting Stat	us Frame Forwarding	Learnin; Capabilit
curity Filter SL Setting					Speed 100		Frame	
Current Port	No.	Link Speed	Duplex	Negotiation		Duplex	Frame Forwarding	Capabili Enable
curity Filter ISL Setting	No.	Link Speed	Duplex Full	Negotiation Enable	100	Duplex Full	Frame Forwarding Enable	Capabili

You are able to setup port configurations in this page and check which port to apply these settings (check all ports to apply all ports with the settings in once.). Press "Submit" to take effect on the new settings. All information will be updated to the status table.

3.3.2 Flow Control Setting

Port Management			
Port Configuration	Pash-man	IEEE 802.3x Flow Control	Ē
Flow Control Setting	Backpressure	IEEE 802.51 Flow Control	
Port Mirroring	Disable 💌	Enable 💌	
Bandwidth Control		Submit	
Broadcast Storm Control			l.
CRC Counter			
VLAN			
QoS Setting			
Security Filter			Ē
VDSL Setting	Backpressure	IEEE 802.3x Flow Control	
	Enable	Enable	

Two settings can be changed in "Flow Control Setting" page: backpressure and IEEE 802.3x Flow Control. Once you make your choice, please click "Submit" to save your choice.

3.3.3 Port Mirroring

Port Management	Port Mirroring		Click here to change port mirror mode		
Port Configuration Flow Control Setting	Change Mirror mode			-	
Port Mirroring	Mirror Port	1	2	3	4
Bandwidth Control	WIIFFOF POR	•	0	0	0
Broadcast Storm Control	Mirror Mode	Tx & R	x 🗸		
CRC Counter		1		2	4
VLAN	Source Port		0	0	4
QoS Setting		Update			
Security Filter					
VDSL Setting					

"Port Mirroring" page allows you to change mirror setups in two styles. Click on "Change Mirror Mode" to change mirror setup style.

In order to accomplish port mirroring function, you need the following information.

- 1. Mirror Port: select a mirror port to monitor the traffic source.
- 2. Mirror Mode:
 - Disable: port mirroring function is disabled.
 - Rx: copy the incoming packets of the selected source port to the selected mirror port.
 - Tx: copy the outgoing packets of the selected source port to the selected mirror port.
 - Tx&Rx: copy both incoming and outgoing packets from the selected source port to the selected mirror port.
 - Mirror source-destination pair: Tx port and Rx port must be the different port.
- 3. Source Port: the traffic source port which will be copied to the mirror port.
- 4. Destination Port: only available in mode 2.
 - Mode 1

stem P	ort Mirroring			
ort Management				
Port Configuration				
Flow Control Setting	Change Mirror mode			
Port Mirroring	Mirror Port	1 2	3	4
Bandwidth Control	MITO FOR	• O	0	0
Broadcast Storm Control	Mirror Mode	Tx & Rx 🗸		
CRC Counter		1	3	
/LAN	Source Port		3	4
os Setting		Update		
Security Filter		<u> </u>		
/DSL Setting				

For mode 1, there are four options for "Mirror Mode": Disable, Rx, Tx, and Tx&Rx. In this mode, all you need is setting up mirror port number, source port number, and mirror mode. Then, click on "Update" to save your change.

• Mode 2

System	Port Mirroring				
Port Management					
Port Configuration					
Flow Control Setting	Change Mirror mode				
Port Mirroring	Mirror Port	1	2	3	4
Bandwidth Control	MITOLEOIL	۲	0	0	0
Broadcast Storm Control	Mirror Mode	Mirror sou	rce-destination pair	~	
CRC Counter		1		2	4
LAN	Dest Port	1	2	3	4
	-	0		0	0
loS Setting	Source Port	1	2	3	4
ecurity Filter	Source Port	•	0	0	0
/DSL Setting			Update		

In mode 2, you can choose either "Disable" or "Mirror source-destination pair" for "Mirror Mode". In addition, you need to choose destination port and source port. Please click on "Update" to save the settings after you finish your changes.

3.3.4 Bandwidth Control

Management			
Configuration	Port No	Tx Rate	Rx Rate
Control Setting	TOILING		
rroring		(0~3124) 200 x32Kbps	(0~3124) 200 x32Kbps
vidth Control	1 🗸		
cast Storm Control		0 for 100Mbps	0 for 100Mbps
Counter		Update LoadDefa	ut
l Setting			
etting ity Filter			
ty Filter	Port No	Tx Rate	Rx Rate
100-0-0-0-0-0-0	Port No		Rx Rate
ty Filter	Port No	Tx Rate	
Filter	1	Tx Rate 100Mbps	100Mbps

In "Bandwidth Control" page, choose the port you wish to set up bandwidth control, then, fill up Tx and Rx rates. Click on "Update" to load the settings you choose; otherwise, click on "Load Default" to restore the default value for the selected port.

stem	Bandwidth	Control	
ort Management	-11		
Port Configuration	Port No	Tx Rate	Rx Rate
Flow Control Setting	FOIL NO	1x Rate	KX Kate
Port Mirroring	-	(0~3124) x32Kbps	(0~3124) x32Kbps
Bandwidth Control	1 🗸		
Broadcast Storm Control		0 for 100Mbps	0 for 100Mbps
CRC Counter		Update LoadDefat	lt
/LAN			
VLAN QoS Setting			
QoS Setting			
	Port No	Tx Rate	Rx Rate
QoS Setting Security Filter	Port No 1	Tx Rate 6.400Mbps	Rx Rate 6.400Mbps
QoS Setting Security Filter	Port No		
QoS Setting Security Filter	1	6.400Mbps	6.400Mbps

Once you update the settings, the table will show current setups for each port.

3.3.5 Broadcast Storm Control

System	Broadcast	Storm Protectio	n		
Port Management	g — — —				
Port Configuration					
Flow Control Setting	Port No.	Broadcast Sto	orm Include N	Initicast	Threshold(1~255)
Port Mirroring	1 💌	Disable 💌	Disabl	· ·	
Bandwidth Control			Submit		
Broadcast Storm Control	Nue 1 D as loss 0	. F.11. 1. J.: :	ng packet if the number of queued	1 harren andrea da arren al	1 - 1 - 1 - 1 1
CRC Counter	INOIE 1: DIORDCR24 21	orm = Ensible, grop the incomi	ng packet if the humber of queuea	aroadcast packet is over t	ne threshold.
VLAN	Note 2: Include Mul	ricast = Enable, "hroadcast storr	m protection" includes multicast p	ickets OxFFFFFFF or m	nulti-cast address. Include
QoS Setting			oes not include multicast packets.	(
Security Filter	2				
a farmer and the set of the					
VDSL Setting	21				
VDSL Setting	8				
VDSL Setting	8				
VDSL Setting	Port No.	Broadcst Storm	Include Multicast	Threshold	
VDSL Setting	Port No.	Broadcst Storm Disable	Include Multicast Disable	Threshold 8	
VDSL Setting	Port No.				
VDSL Setting	1	Disable	Disable	8	

In this section, you will be able to block excessive broadcast packets. Choose which port you wish to start this protection. Enable "Broadcast Storm" option to execute this function and give a value for "Threshold". Broadcast packets will be dropped when broadcast packets number is more than threshold value.

3.3.6 CRC Counter

System	CRC Counter
Port Management	
Port Configuration	[]
Flow Control Setting	Port 1~4 CRC Counter (Packet)
Port Mirroring	0
Bandwidth Control	Clear Refresh
Broadcast Storm Control	
CRC Counter	PS. The max value is 255.
VLAN	
QoS Setting	
Security Filter	

"CRC Counter" shows how many CRC error occurs during your VDSL2 Bridge is up. Click "Clear" to reset the counter and "Refresh" to update the latest counter information.

3.4 VLAN

Proscend 101 VDSL2 Bridge provides two possible ways to set VLAN up, by Port base or by Tag base. If you choose to set up VLAN based on Port, the settings in Tag base will not be executed.

3.4.1 Port base VLAN

System	Port Base	e VLAI	N				
Port Management				_			
/LAN	VLAN Mode : P	ort Base	Change Mode				
Port base VLAN							
Tag base VLAN	Port NO	VL	AN Mem	oer			
os Setting		Port	1 🗹 Port	2 🗌			
Security Filter	1 💌	Port	3 Port	4 🗹			
/DSL Setting		VDSI	MGN	T			
	Up	date Low	dDefault				
	Ľ				-		
				VLAN	Member		
	Port	1	2	VLAN 3	Member 4		MGMT
	Port	1 V	2 V			VDSL V	MGMT V
	Port	l V V		3	4	VDSL	
	1		V	3 V	4 V	VDSL V	V
	1	V	V V	3 V V	4 V V	VDSL V V	V V
	1 2 3	V V	V V V	3 V V V	4 V V V	VDSL V V V	V V V

You need to make sure "VLAN Mode" is correct. If not, click on "Change Mode" to switch VLAN mode.

Choose "Port No" first, then, check which port should be in this VLAN member. Click on "Update" to save your changes, and click on "LoadDefault" to restore the default value.

ystem	Port Base							
ort Management								
LAN	VLAN Mode : P	ort Base	Change Mode					
Port base VLAN								
ag base VLAN	Port NO	VL	AN Mem	ber				
oS Setting		Port	1 🗹 Port	2 🗹				
ecurity Filter	1 🖌	Port	3 🗹 Port	4 🗹				
DSL Setting		VDSI	MGN	T				
	Up	date Loa	dDefault					
				VLAN	Member			
	Port		2	-	Member 4	VDSI	MGMT	
	Port	1	2	VLAN I 3	4	VDSL	MGMT	
	1	1	-	3	4 V	V	V	
	Port 1 2	1 - V		-	4			
	1		-	3	4 V	V	V	
	1	V	- V	3 - V	4 V V	V V	V V	
	1 2 3	V V	- V V	3 - V V	4 V V V	V V V	V V V	

All information will be shown in the table. Please check whether the changes you just made are correctly displayed in the table.

3.4.2 Tag base VLAN

VLAN	VLAN Mode : Port	Bue Ourra	lede																
MO NO	VLAN No	Eaable	VID (1-4094)	٨	dd Tag		Rea	aove '	Tag		/LAN								
liher	1.			Pe Pe Pe	Line Stre Stre Mre		Pi Pi Pi	orti C Stro Ctro Ctro Ctro Ctro		Pe Pe Pe	orti 2 ort2 Cort3 Cort4 Cort4 Cort4 Cort4 Cort4 Cort4 Cort4 Cort4 Cort4 Cort4 Cort2 Cort3 Cort4	1 1 1 2							
			[inter]	est2a	817 J														
	PVID	a maria	a concernant de	PVI	D Val	ië is	(1-4	094)		100	www.		1 194	11496					
	Post	Portl	Port2	1	Port3		1	Porte		١	/DSL		M	GMT					
	PVID	Į.			1			1			-								
	La reverse a				(detmi)		.cadDel	a.).	_	_		_	_	_					
	VLAN			6	VL.	AN I	Mean	ler -			٨	dd Ti	IZ.	. 1		Re	nowe	Tag	
	NO	Enable	VID	P1	12	P3	F4	VI.	MG	Pl	P2	PJ	P4	VI.	P1	P2	P3	P4	i
	1	0	1	V	V	V	V	V	V		÷.					1			
	2	X	2	V	V	V	V	V	V		-	-	-		-	-	-	-	
	3	X)	V	V	V	V	V	V	1						· ·	-		
	4	X	4	VI	VI	VI	V	V	V							1.	1 . 1		

Click on "Tag base VLAN" link on the left-hand side to switch to this page. If you see "VLAN Mode" is still "Port Base", then, click on "Change Mode" to switch to the correct mode.

rt Management AN ort base VLAN	VLAN Mode : Tag	Base Change M	ode					se	tup a	rea 1	
ag base VLAN S Setting	VLAN No	Enable	VID (1~4094)	Add Tag	Remove Tag	VLAN Member	7				
curity Filter SL Setting	1 💌	Enable 💌	8	Port1 / Port2 / Port3 Port4 VDSL /	Port1 Port2 Port3 Port4 VDSL	Port1 @ Port2 @ Port3 @ Port4 @ VDSL @ MGMT @					
setup area 2			Submit) []	.cadDefault					_		
	PVID			PVID Value	is (1~4094)						
	Port	Port1	Port2	Port3	Port4	VDSL		IGMT			
	PVID		500 500	Submit (LoadDefault						
	VLAN	711-	UID		LoadDefault	Add	l Tag		R	шоче	Tag
		Enable	VID		Member		l Tag 23 P4	VL P	10 C 10 C 10 C		Tag P4 VL
	VLAN NO	0	1	VLAN P1 P2 P3 V V V	Member P4 VL MG V V V	P1 P2 F	a se a conserva a	VL P	1 P2		and the second second second
	VLAN			VLAN PI P2 P3	Member P4 VL MG V V V	P1 P2 P	P3 P4		1 P2	P3	P4 VL

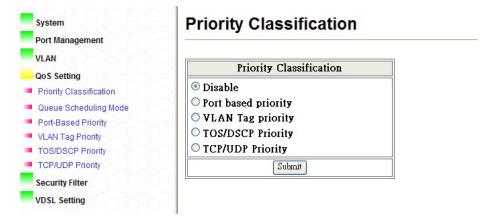
In setup area 1, you can choose VLAN number, and which port you want to add or remove a tag. In addition, you check all the VLAN members you wish to have in this VLAN number. Click on "Submit" to save this change. (Note: a message box "Control port will not be able to connect devices" will be shown due to some receiver machine will not recognize VLAN tag so you may be not able to connect to a tagged port.)

In setup area 2, you can set PVID of each port. If your PVID is invalid, a warning message "Invalid VLAN status" will be shown.

For more information about VLAN tagging, please check Appendix IV.

3.5 QoS Setting

3.5.1 **Priority Classification**



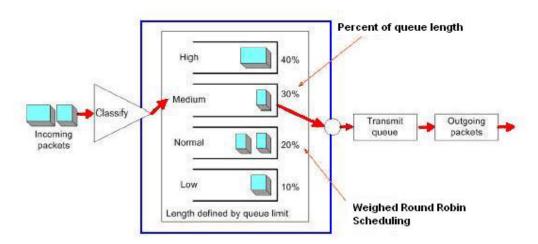
"Priority Classification" allow you to enable QoS function based on the selected priority mode. If you need to start QoS function, please make sure you visit this page first and enable the priority mode you wish to apply; otherwise, the QoS function will not be executed.

3.5.2 Queue Scheduling Mode

System Port Management	Prior	ity Mode				
VLAN	81					
QoS Setting	Priority	y Mode				
Priority Classification Queue Scheduling Mode Port-Based Priority	Mode	 ○ Strictly Priority ⊙ Weight-Round-Robin. 	Q3 SP Q3 weight 8 💌	Q2 SP Q2 weight 4	Q1 SP Q1 weight 2 💌	Q0 SP Q0 weight 1
VLAN Tag Priority	8		(Update		
TOS/DSCP Priority TCP/UDP Priority	8					
Security Filter	8					
VDSL Setting	<u> </u>					

There are two modes in "Queue Scheduling Mode".

- 1. Strictly Priority: services queues based on priority only. As traffic comes into the EFM modem, traffic on the highest priority queue, Q3 is transmitted first. When that queue empties, traffic on the next highest-priority queue, Q2 transmitted until Q2 empties, and then traffic is transmitted on Q1 and so on. If higher priority queues never empty, then traffic on lower priority never gets sent. The SP class is typically for video applications that require a fixed amount of bandwidth to be considered good quality.
- 2. Weight-Round-Robin: services on a rotating basis and is activated only when a port has more traffic than it can handle. A queue is given an amount of bandwidth irrespective of the incoming traffic on that port. The queue then moves to the back of the list. The next queue is given an equal amount of bandwidth, and then moves to the end of the list, and so on, depending on the number of queues being used. This works in a looping fashion until a queue is empty.



Choose what kind of algorithm you wish to apply and press "Update" to save this setting.

3.5.3 Port-Based Priority

System	Qos Port-Ba	ased Priority	
Port Management VLAN QoS Setting Priority Classification	PS. The functions will selected.	l work only if the selection of "Port based	d priority" in the webpage - Priority Classification is
Queue Scheduling Mode	Port No.	Queue No.	
Port-Based Priority		Queue 0 is the 1st priority	
VLAN Tag Priority TOS/DSCP Priority	8	Submit	
TCP/UDP Priority			
Security Filter	Port No.	Queue No.	
VDSL Setting		Queue3	
	2	Queue3	
	3	Queue3	
	8 4	Queue3	

Two items should be selected in order to set this priority up.

- 1. Port number: choose the port number you wish to apply this policy.
- 2. Queue number: choose which queue you wish the selected port belong to.

Press "Submit" to execute this modification.

3.5.4 VLAN Tag Priority

System	Qos Tag-Based Pr	riority	
Port Management VLAN	PS. The functions will work only	if the selection of "VLAN T	'ag priority" in the webpage - Priority Classification is selected.
QoS Setting Priority Classification	VLAN Priority	Queue No.	
Queue Scheduling Mode Port-Based Priority	1 v	Queue3 🗸	
VLAN Tag Priority TOS/DSCP Priority TCP/UDP Priority	VLAN Priority	Queue No.	
Security Filter	0	Queue0	
VDSL Setting	1	QueueO	
	2	Queue0	
20-0-0-0-0-0-0-	3	QueueO	
0-0-0-0-0-0-0	4	Queue0	
NONONONONON	5	Queue0	
0-0-0-0-0-0	6	Queue0	
5-6-6-6-6-6-6-	7	QueueO	

You will be able to assign VLAN priority and its corresponding queue number in this page. Click on "Submit" to save when you are ready to apply the changes.

3.5.5 TOS/DSCP Priority

Port Management	Qos TOS							
VLAN	PS. The functions	will work onl	w if the selection	of "TOS/DSCP	priority" in the w	rebnage - Priori	ty Classification	is selected
QoS Setting	To: The function	o nini nork oli	y in the belection	or romboer	priority in the i	copuge Thom	ity clubbilication	io ocrecieu.
Priority Classification	TOS/DS	CP No.	Queue	e No.]			
Queue Scheduling Mode	0	*	Queut	1 v				
Port-Based Priority								
VLAN Tag Priority		Su	omit]			
TOS/DSCP Priority	<u> </u>				S			
TCP/UDP Priority	TOS/DSCP	Queue	TOS/DSCP	Queue	TOS/DSCP	Queue	TOS/DSCP	Queue
Security Filter	No.	No.	No.	No.	No.	No.	No.	No.
VDSL Setting	0	Queue0	16	Queue0	32	Queue0	48	Queue3
	1	Queue0	17	Queue0	33	Queue0	49	Queue0
	2	Queue0	18	Queue3	34	Queue3	50	Queue0
	3	Queue0	19	Queue0	35	Queue0	51	Queue0
	4	Queue0	20	Queue0	36	Queue0	52	Queue0
	5	Queue0	21	Queue0	37	Queue0	53	Queue0
	6	Queue0	22	Queue0	38	Queue0	54	Queue0

In this section, you can assign queue with a DSCP priority. Click on "Submit" and the information will be saved and updated to the table below. (Note: in order to allow QoS running TOS/DSCP priority, please make sure you change "Priority Classification" option to "TOS/DSCP Priority" first. For detail information about TOS/DSCP Priority, please check Appendix IV.)

3.5.6 TCP/UDP Priority

Port Management	L	ogical Port Type				
VLAN QoS Setting Priority Classification Queue Scheduling Mode		gical Port n Logical Port Destination Logi	cal Port			
Port-Based Priority		Submit				
TOS/DSCP Priority		Pre-d	efined Logical Port Number			
Security Filter	Entry	Enable	Logical Port Number(Hex)	Queue No.		
VDSL Setting	0	Enable 🐱	0016	Queue2 🐱		
	1	Enable 👻	0166	Qurue2 🛩		
	2	Enable 💌	0d3d	Queue2 💌		
	3	Enable 🐱	1770	Queue2 🛩		
		.n	Submát			
			User-defined Log	ical Port Range		
	Entry	Enable	Low_Number(Hex)	Hi	gh_number(Hex)	Queue M
	0	Enable 🕑	0017		0017	Queue2
	1	Enable 🖌	1648		16a8	Queue2

First, choose "Logical Port Type" and press "Submit" and start this function. Then, if you want to run this priority based on pre-defined logical port, assign "Pre-defined Logical Port Number" entry and click on "Submit" to save the changes. If you want to activate this priority by user-defined logical port, you need to assign "User-defined Logical Port Range" section and press "Submit" to save your modifications. (Note: in order to allow QoS running TCP/UDP priority, please make sure you change "Priority Classification" option to "TCP/UDP Priority" first.)

3.6 Security Filter 3.6.1 MAC ID Filter

System Port Management	MAC ID Fil	ter	
VLAN QoS Setting Security Filter MAC ID Filter Firewall		MAC Address setting (0): a0: 17; aa: 34: 16 (Update)	Mode
FILEWall			
VDSL Setting	82-		
DSL Setting	NO.	MAC Address	Enable
OSL Setting	NO.	MAC Address	Enable
DSL Setting			
/DSL Setting		::::	
/DSL Setting	0	:::	
/DSL Setting	0 1 2	((((((((

Five MAC addresses can be stored in "MAC ID Filter". Choose which entry number you wish to save this MAC and fill up its MAC address in "MAC Address setting" and its mode. Click on "Update" to save this entry.

ID MAC Address setting Mode Dos Setting 0 • : : : : : Disable • MAC ID Filter Uplate ID Firewall VDSL Setting MAC Address Enable 0 0:0:a0:17:aa:34:16 Disable 1 1 :::: 2 :	ort Management	521 <u></u>		
ID MAC Address setting Mode Curity Filter AC ID Filter Firewall DSL Setting NO. MAC Address Enable O 0 00:a0:17:aa:34:16 Disable 1		282		
NO. MAC Address Enable 0 0 00:a0:17:aa:34:16 Disable		ID	MAC Address setting	Mode
irewall DSL Setting NO. MAC Address Enable 0 00:a0:17:aa:34:16 Disable 1 ::::: 2 ::::		0 🗸		Disable 🐱
NO. MAC Address Enable 0 00:a0:17:aa:34:16 Disable 1 :::: 2 :::	IAC ID Filter	-9-1	Update	
NO. MAC Address Enable 0 00:a0:17:aa:34:16 Disable 1 :::: 2 ::::	irewall			
0 00:a0:17:aa:34:16 Disable 1 :::: 2 ::::				
0 00:a0:17:aa:34:16 Disable 1 :::: 2 ::::	DSL Setting	221		
	DSL Setting	NO.	MAC Address	Enable
	DSL Setting			
3	DSL Setting		00:a0:17:aa:34:16	Disable
	DSL Setting	0	00:a0:17:aa:34:16 :	Disable
	DSL Setting	0	00:a0:17:aa:34:16 :	Disable
	DSL Setting	NO.	MAC Address	Enable
	DSL Setting	0 1 2	00:a0:17:aa:34:16 : :	Disable

Now you can notice the table is updated with the MAC address you just saved. If you would love to remove all MAC address in the table, click on "Clear All" to remove every address.

3.6.2 Firewall

This function provides you to filter traffic control or forward packets by bandwidth control. You are able to assign either a specific IP address or a range of IP addresses.

1. Specific IP address

nagement Eatry	Action B	Bandwidth	IP Mode	Source Start IP	Destination End IP	TCP UDP	TCP UDP Mode	Source Start logical Port No.	Destination End logical Port No.
tting y Filter		100Mbps		,,,	***,***,***,***				
Filter 2		100Mbps		,,,			(
3		100Mbps		***,***,***,***	***,***,***,***				
etting 4		100Mbps	•••	***,***,***,***	····,···.,····,···			•••	
5		100Mbps	***	***********	************			***	
6		100Mbps		····, ····, ····, ···	**********		1.000		
7	uge to Range mode	100Mbps							
			Eatry						
			Eatry	1 💌 Beatwith 💌	24) 0 for 100Mbps				
			Entry Action Bandwidth	1 💌 Beatwith 💌	24) 0 for 100Mbps				
		•	Entry Action Bandwidth Source IP	1 v Baadwidth v 2 x32kbps (0~31	24) 0 for 100Mbps			***	
		•	Entry Action Bandwidth Source IP	1 - Beadwaith - 2 x32kbps (0-3) 192 168 1 3 192 168 1 5	24) 0 for 100Mbps			***	
	ije to Range mode	De	Entry Action Bandwidth Source IP stination IP	1 v Bendwidth v 2 x32kbps (0-3) 192 168 1 3 192 168 1 5 192 169 1 5	24) 0 for 100Mbps				
	ige to Range mode	De	Entry Action Bandwidth Source IP stination IP TCP/UDP	1 Beadwidth Beadwi	24) 0 for 100Mbps				

Choose which entry you wish to add this set of data. In this mode, you need to provide specific IP addresses. Click "Submit" if you finish your modification. The data you just saved should be updated into the table in the upper part of this page.

2. IP address range

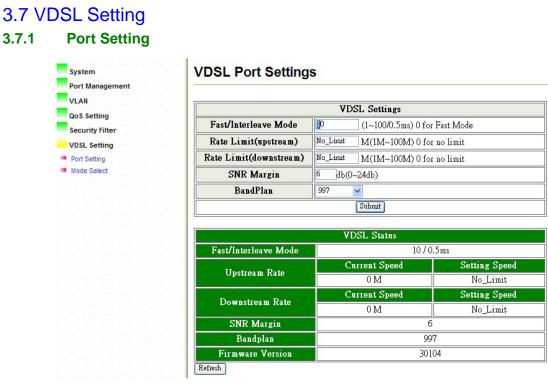
Click on "Change to Range Mode" to switch to the following edit section.

Entry	1 💌
Action	Filter 💌
Bandwidth	2x32kbps (0~3124) 0 for 100Mbps
Sour/Destination IP	Source
Start IP	192 . 168 . 1 . 30
End IP	192 . 168 . 1 . 50
TCP/UDP	TCP 🗸
Sour/Destination	Source
Start logical Port No.	100~65535
End logical Port No.	90 0~65535
	Submit

You need to provide a range of IP address by filling up start IP address and end IP address. After you are done with the modification, press "Submit" to save your settings.

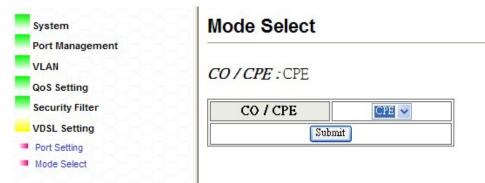
Entry	Action	Bandwidth	IP Mode	Source Start IP	Destination End IP	TCP UDP	TCP UDP Mode	Source Start logical Port No.	Destination End logical Port No.
1	Filter	64Kbps	Source Range	192.168.1.30	192.168.1.50	TCP	Source Range	10	90
2		100Mbps		,,,	,,,				
3		100Mbps		,,	,,				· · · · ·
4		100Mbps	· · · · · ·	,,	,,				
5		100Mbps	· · · · ·	,,	,,				
б		100Mbps	·?	,,	····,···,···,···				
7		100Mbps		,,	·,,				

The latest information will be updated into the table.



In this section, you can change VDSL port settings. After you change the settings, click "Submit" to update your VDSL2 Bridge. Click "Refresh" to get the latest information of VDSL status.





In "Mode Select" page, you can set your VDSL2 Bridge up as CO, central office, or CPE, customer premises equipment. Once you choose the mode, click "Submit" to save this change. (Note: this function will restart your VDSL2 Bridge.)

Appendix I

Connector Architecture

Ethernet Port Connector (RJ-45)

The Ethernet Port interface is a 8 position Modular Jack. The table below displays the pin out assignments.

Pin Number	Assignment (MDI-X)	Figure
1	RX+; Receive data +	1 8
2	RX-; Receive data -	
3	TX+; Transmit data +	
4	Not used	
5	Not used	1 8 Front View
6	TX-; Transmit Data -	Front view
7	Not used	Top View
8	Not used	

VDSL Interface Pin Assignments (RJ-45)

The VDSL interface is standard eight-pin modular jack. The table below displays the pin out assignments.

Pin Number	Description	Figure
1	Not used	
2	Not used	1 8 1 8 1 8 1 8 Front View Top View
3	Not used	
4	ANALOG Input/Output	
5	ANALOG Input/Output	
6	Not used	
7	Not used	
8	Not used	

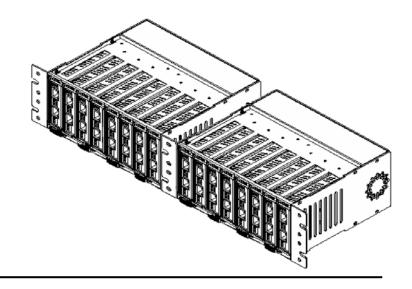
Appendix II

Chassis Accessory



Proscend also provide the Mini-Chassis solution for application on the rack in CO side. The major factor of Chassis 800 is listed below:

- 2 U high
- Support 8-slot in one unit
- Two units of mini-chassis are able to fit into the 19-inch standard rack to support 16-slot in 2U height., as the illustration below
- Power Input: 90-230V AC, 47~63Hz
- Embedded 10A/230V fuse.



Appendix III FAQ

Default IP Address

Default IP address is "http://192.168.1.1".

Default Login Information

Default login name is "admin" and the password is "admin".

How to Reset Proscend 101 VDSL2 Bridge

There is a reset button on the back panel of VDSL2 Bridge. Please use a sharp item, such as, sharp pencil or paper clip, to press this button for couple seconds. This will reset all the configurations of Proscend 101 VDSL2 Bridge. You will be able to login this machine with the default login information and default IP address.

Note:

- 1. Press this button for 2 seconds: reboot VDSL2 Bridge without reset any configuration.
- 2. Press this button for 8 seconds: load default factory configuration and reboot VDSL2 Bridge.

Appendix IV Terminology

Term	Meaning		
QoS	Quality of Service		
	Refers to resource reservation control mechanisms rather than		
	the achieved service quality. QoS is the ability to provide		
	different priority to different applications, users, or data flows,		
	or to guarantee a certain level of performance to a data flow.		
	(ref. 2)		
SNR	Sigal-to-noise Ratio		
	Is measure used in science and engineering to quantify how		
	much a signal has been corrupted by noise. It is defined as		
	the ratio of signal power to the noise power corrupting the		
	signal. A ratio higher than 1:1 indicates more signal than		
	noise.		
TOS/DSCP	Type of Service/ Diffserv Codepoint		
	This uses the upper six bits in the ToS (Type of Service) byte to		
	mark priority traffic. Hence, there are 64 possible codepoints.		
VLAN Tagging	VLAN tagging (IEEE 802.1A) is a networking standard written		
	by the IEEE 802.1 work group allowing multiple bridged		
	networks to transparently share the same physical network link		
	without leakage of information between networks. VLAN		
	tagging defines the meaning of a Virtual LAN (VLAN) with		
	respect to the specific conceptual model underpinning bridging		
	at the MAC layer and to the IEEE 802.1D spanning tree		
	protocol. This protocol allows for individual VLANs to		
	communicate with one another with the use of a switch with		
	Layer-3 capabilities, or a router. (ref. 1)		

Appendix V Reference

- 1. "IEEE 802.1Q" Wikipedia July 8, 2010 <<u>http://en.wikipedia.org/wiki/IEEE_802.1Q</u>>
- "Quality of service" Wikipedia July 8, 2010
 <<u>http://en.wikipedia.org/wiki/QoS#QoS_priority_levels</u>>
- "Signal-to-noise ratio" Wikipedia June 28, 2010,
 http://en.wikipedia.org/wiki/Signal-to-noise_ratio