

5200N Series G.SHDSL.bis Router

User Manual

V0.06

Table of Contents

1	Desc	riptions	3
	1.1	Features	3
	1.2	Specifications	
	1.3	Applications	7
2	Cotti	ng to know about the router	0
2	Getti	-	
	2.1	Front Panel	
	2.2	Rear Panel	
	2.3	SHDSL.bis Line Connector	
	2.4	Console Cable	. 10
3	Insta	II the Router	. 11
	3.1	Check List	11
	3.2	Install the SHDSL.bis Router	
4	Cont	iguration via Web Browser	
4			
	4.1	Basic Setup	
	4.1.1		
	4.2	STATUS	
	4.2.1	Information	
	4.2.2		
	4.2.3		
	4.2.4		
	4.3 4.3.1	Advanced Setup	
	4.3.1		
	4.3.2		-
	4.3.4		
	4.3.4		
	4.3.6		
	4.3.7		
	4.3.8		
	4.3.9		
	4.3.1		
	4.3.1	1 DDNS	. 34
	4.3.1	2 FIREWALL	. 35
	4.3.1	3 Content Filter	. 36
	4.3.1	4 IGMP	. 36
	4.3.1	5 SNTP	. 37
	4.1	ADMIN	. 38
	4.1.1	Security	
	4.1.2		
	4.2	Utility	
	4.2.1	SYSTEM LOG	
	4.2.2	,	
	4.2.3	15	
	4.2.4	Restart	. 44

4.3 I	LOGOUT	44
4.3.1	LAN-to-LAN connection with bridge Mode	45
4.3.2	LAN to LAN connection with routing mode	47
5 Confi	guration via Serial Console or Telnet	51
5.1	Introduction	51
5.1.1	Serial Console	51
5.1.2	Telnet	51
5.2 I	Main menu	52
5.3	Key CLI Command tree overview	

1 Descriptions

5200N Series 2/4/8-Wire SHDSL.bis EFM Bridges/Routers comply with the latest G.SHDSL.bis technology standards and supports symmetric data rate up to 15.3Mbps/Pair under TC-PAM 128. Up to four pairs can be bonded together for aggregated bandwidth over 61 Mbps. It provides a secure and symmetrical high-speed connectivity over existing copper-line infrastructure that is ideal for service providers as well as SOHO and SME users.

5200N supports back to back connectivity for long reach Ethernet extension. Users can make a direct connection between two SHDSL.bis routers by using a standard telephone cable, and configure one as CO and the other as CPE. The connection offers a cost effective solution for service providers and SME users who need high-speed dedicated network applications.

The SHDSL.bis EFM routers are integrated with high-end Bridging/Routing capabilities that support flexible traffic management policies and Quality of Service, enabling business-class Ethernet services with flexibility of mapping user traffic into Ethernet flows. The unit can be managed by different ports and applications including comprehensive command-line interface (CLI), Telnet, user-friendly GUI-based Web Browser Interface and SNMP.

The SHDSL.bis routers help customers to meet their growing data communication needs by the latest broadband technologies. Through the power of SHDSL.bis products, you can access superior manageability and reliability.

1.1 Features

- ✓ Symmetrical high-speed Ethernet service with SHDSL.bis, backward compatible with SHDSL
- ✓ EFM bonding up to 61 Mbps (8-Wires, TC-PAM 128)
- ✓ Support both EFM mode and ATM mode(1 PVC)
- ✓ Support point to point connectivity
- ✓ Support dying gasp

1.2 Specifications

WAN Interface

- SHDSL.bis: ITU-T G.991.2 (2004) Annex A/B/F/G supported
- Support EFM Bonding and SHDSL M-Pair mode
- Encoding scheme: TC-PAM 16/32/64/128
- Data Rate:

N x 64 Kbps (N=3~89) using TC-PAM 16/32 Max. 5.696Mbps (1-Pair) Max. 11.392Mbps (2-Pair) Max. 22.784Mbps (4-Pair) N x 64 Kbps (N=3~239) using TC-PAM 64/128 Max. 15.296 Mbps (1-Pair) Max. 30.592 Mbps (2-Pair) Max. 61.184 Mbps (4-Pair) Impedance: 135 ohms. Compliant with IEEE 802.3ah

LAN Interface

• 4-Ports 10/100M Switch, Auto-negotiation for 10/100Base-TX and Half/Full Duplex, Auto-MDIX Supported.

Bridging

- Up to 1024 MAC address learning bridge
- IEEE 802.1D transparent learning bridge
- IEEE 802.1Q/1P VLAN Port-based/Tagging
- QoS Class-based (Prioritization/Traffic/DSCP Mark), Rate Limiting, Up to 8 priority queues

Routing

- Support IP/TCP/UDP/ARP/ICMP/IGMP protocols
- IP routing with static routing and RIPv1/RIPv2 (RFC1058/2453)
- IP multicast and IGMP proxy (RFC1112/2236)
- Network address translation (NAT/PAT) (RFC1631)
- DHCP server, client and relay (RFC2131/2132)
- DNS relay/proxy and caching (RFC1034/1035)
- Dynamic DNS
- IP precedence (RFC 791)

ATM

- Multiple Protocols over AAL5
- Ethernet over ATM (RFC 2684/1483)
- 1 PVC

EFM

- EFM mode compliant to IEEE 802.3,
- PPP over Ethernet (RFC2516)
- Support of OAMPDU information and functionality (ITU-T Y.1731)
- OAMPDU Event Notification, Variable Request, Variable Response, Loopback Control

• VLAN base QOS (802.1P/Q), Priority Queue

Network Protocol

- VoIP(SIP) pass-through
- IPv4 (ARP/RARP, TCP/UDCP, ICMP)
- SNTP (Time Zone/ Daylight Savings)

Security

- Natural NAT/PAT firewall
- DMZ host
- Virtual server mapping (RFC1631)
- Advanced stateful packet inspection (SPI) firewall Denial of Service (DoS)
- Application level gateway for URL and keyword blocking (Content Filter)
- Access Control List (ACL)
- Support PAP/CHAP/MS-CHAP client

Management

- Web-based GUI for quick setup, configuration and management
- Command-line interface (CLI) for local console and Telnet/SSH access
- Password protected management and access control list for administration
- Remote management via WWW/SSH/Telnet local/remote
- Real-time system log logging
- SNMP SNMPv1/SNMPv2 (RFC 1157/1901/1905) and MIB-II (RFC 1213/1493)
- Software upgrade via Web-browser/CLI, supported TFTP/FTP
- Dying Gasp

Diagnostics/Monitoring

- Routing Table
- Packet Statistics

Hardware Interface

- WAN: RJ-45 x 1
- LAN: RJ-45 x 4
- Console Port: RS232 female
- Reset Button: Load factory default
- Power Jack

Indicators

- System: PWR, ALM
- WAN 1~4: LNK/ACT
- LAN 1~4: LINK/ACT

Physical / Electrical

- Dimensions: 18.7 x 3.3 x 14.5cm (WxHxD)
- Power: 100~240VAC (via power adapter)
- Power Consumption: 9 watts Max
- Operating Temperature: 0~45°C
- Storage Temperature: -20°C~70°C

• Humidity: 0%~95%RH (non-condensing)

Memory

• 128MB Flash Memory, 64MB DDR2 DRAM

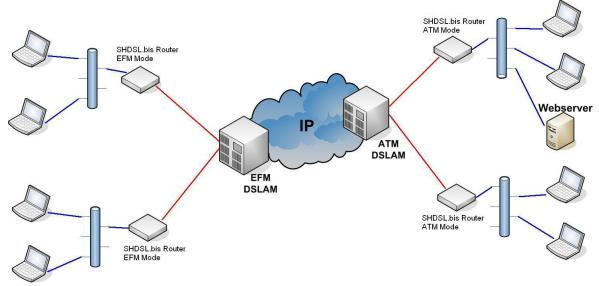
Regulatory

- CE
- FCC Part 15 Class A
- VCCI
- EN60950

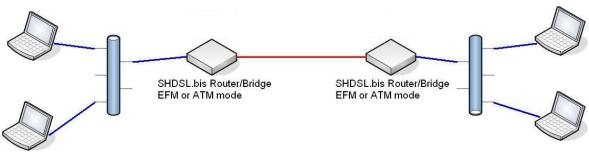
*We reserves the right to change specifications without prior notice.

Ordering Information

5210N	2-Wire G.Shdsl.bis EFM Router with 4 LAN Ports
5220N	4-Wire G.Shdsl.bis EFM Router with 4 LAN Ports
5240N	8-Wire G.Shdsl.bis EFM Router with 4 LAN Ports



Combination with EFM or ATM DSLAM



Point-to-point connection

.

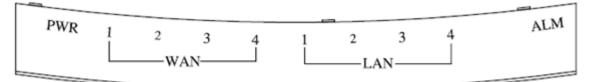
Getting to know about the router

This chapter introduces the main features of the router.

2.1 Front Panel

2

The front panel contains LEDs which show status of the router.

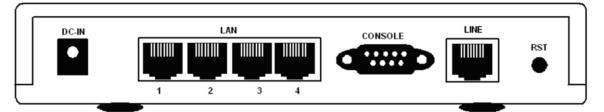


LED status of SHDSL.bis Router

LEDs		Active	Description		
PWR		On	The power adaptor is connected to this device		
		On	SHDSL.bis line 1 connection is established		
	LINK 1	Blink	SHDSL.bis line 1 handshake		
		DIIIK	Transmit or received data over SHDSL.bis link 1		
		On	SHDSL.bis line 2 connection is established		
	LINK 2	Blink	SHDSL.bis line 2 handshake		
DSL		DIIIIK	Transmit or received data over SHDSL.bis link 2		
DJL		On	SHDSL.bis line 3 connection is established		
	LINK 3	Blink	SHDSL.bis line 3 handshake		
		DIIIK	Transmit or received data over SHDSL.bis link 3		
	LINK 4	On	SHDSL.bis line 4 connection is established		
		Blink	SHDSL.bis line 4 handshake		
			Transmit or received data over SHDSL.bis link 4		
	LINK/ACT1	On	Ethernet cable is connected to LAN 1		
	LINIÇACI I	Blink	Transmit or received data over LAN 1		
	LINK/ACT2	On	Ethernet cable is connected to LAN 2		
IAN	LINK/ACTZ	Blink	Transmit or received data over LAN 2		
LAN	LINK/ACT3	On	Ethernet cable is connected to LAN 3		
	LINK/ACTS	Blink	Transmit or received data over LAN 3		
	LINK/ACT4	On	Ethernet cable is connected to LAN 4		
	LINN/AC14	Blink	Transmit or received data over LAN 4		
			SHDSL.bis line connection is dropped		
ALM		Blink	SHDSL.bis self-test		
			No Alarm		

2.2 Rear Panel

The rear panel of SHDSL.bis router is where all of the connections are made.



Connectors Description of SHDSL.bis Router

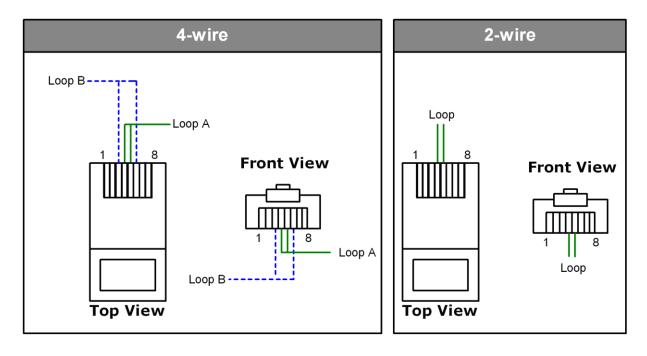
DC-IN	Power adaptor inlet: Input voltage 12VDC
LAN (1,2,3,4)	Four Ethernet10/100BaseT auto-sensing and auto-MDI/MDIX for LAN ports
	(RJ-45)
CONSOLE	RS- 232C (DB9) for system configuration and maintenance
LINE	SHDSL.bis interface for WAN port (RJ-45)
RST	Reset button for reboot or load factory default



The reset button can be used only in one of two ways.

- (1) Press the Reset Button for 1 second to make the system reboot.
- (2) Pressing the Reset Button for 4 seconds will make the system load the factory default settings and lose your existing configuration. When you want to change its configuration but forget the user name or password, or if the product is having problems connecting to the Internet and you want to configure it again by clearing all configurations, press the Reset Button for 4 seconds with a paper clip or sharp pencil.

2.3 SHDSL.bis Line Connector



Below figure show the SHDSL.bis line cord plugs pin asignment:

2.4 Console Cable

Below figure show the cosole cable pins asignment:

Pin Number	Description	Figure	
1	No connection		
2	RxD (O)		
3	TxD (I)		
4	No connection	5 4 3 2 1	
5	GND		
6	No connection	9876	
7	CTS (O)		
8	RTS (I)		
9	No connection		

3 Install the Router

This chapter will guide you to install the SHDSL.bis Router via Web Configuration and Serial Console. Please follow the instructions carefully.

Note: There are three methods to configure the router: Serial console, Telnet or Web Browser. Only one configuration method is used to setup the Router at any given time. Users have to choose one method to configure it.

For Web configuration, you can skip item 3. For Serial Console Configuration, you can skip item 1 and 2.

3.1 Check List

(1) Check the Ethernet Adapter in PC or NB

Make sure that Ethernet Adapter had been installed in PC or NB used for configuration of the router. TCP/IP protocol is necessary for web configuration, so please check the TCP/IP protocol whether it has been installed.

(2) Check the supported Web Browser in PC or NB

In order to set up the routeter by Web Configuration, your PC or notebook computer needs to install the supported web browser

(3) Check the Terminal Access Program

For Serial Console and Telnet Configuration, users need to setup the terminal access program with VT100 terminal emulation.

(4) Determine Connection Setting

Users need to know the Internet Protocol supplied by your Service Provider and determine the mode of setting.

Protocol Selection					
RFC1483	Ethernet over ATM				
RFC1577	Classical Internet Protocol over ATM				
RFC2364	Point-to-Point Protocol over ATM				
RFC2516	Point-to-Point Protocol over Ethernet				

The difference Protocols need to setup difference WAN parameters. After knowing the Protocol provided by ISP, you have to ask the necessary WAN parameters to setup it.

Bridge EoA

Route EoA

/	
	VPI:_
	VCI:
	Encapsulation:
	Gateway:
	Host Name: <u>(if applicable)</u>

/	VPI:_
	VCI:
	Encapsulation:
	IP Address:
	Subnet Mask:_
	Gateway:
	DNS Server:_

PPPoE

VPI:_ VCI:__ Encapsulation: User Name: Password: DNS Server:_ Host Name:<u>(if applicable)</u>

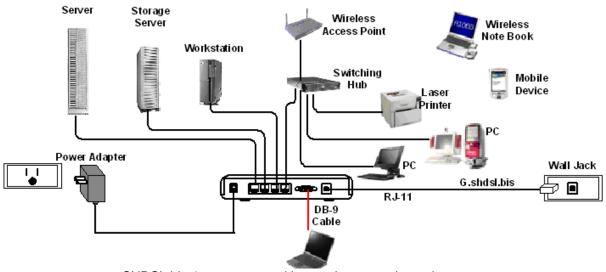


To avoid possible damage to this Router, do not turn on the router before Hardware Installation.

- Connect the power adapter to the port labeled DC-IN on the rear panel of the product.
- Connect the Ethernet cable.

Note: The router supports auto-MDI/MDIX switching so both straight through and cross-over Ethernet cable can be used.

- Connect the phone cable to the router and the other side of phone cable to wall jack.
- Connect the power adapter to power source inlet.
- Turn on the PC or NB, which is used for configuration the Router.



SHDSL.bis 4-ports router with complex network topology

4 Configuration via Web Browser

OVERVIEW

The web configuration is an HTML-based management interface for quick and easy set up of the SHDSL.bis Routers by using an Internet browser.

After properly connecting the hardware of SHDSL.bis router as previously explained. Launch your web browser and enter <u>http://192.168.0.1</u> as URL

The default IP address and sub net-mask of the Router is 192.168.0.1 and 255.255.255.0. Because the router acts as DHCP server in your network, the router will automatically assign IP address for PC or NB in the network.

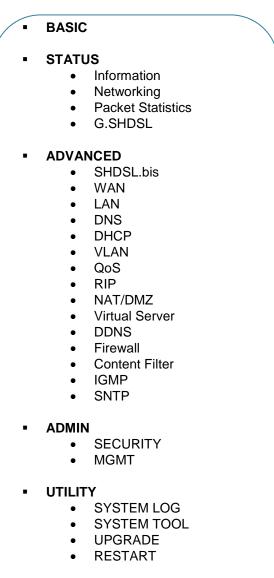


Type User Name **root** and Password **root** and then click OK. The default user name and password both is *root*. For the system security, suggest changing them after configuration.

Note: After changing the User Name and Password, strongly recommend you to save them because another time when you login, the User Name and Password have to be used the new one you changed.

Function Listing

Below is the full function list of G.Shdsl.bis router



LOGOUT

4.1 Basic Setup

OVERVIEW

Basic setup includes Bridge and Routing operation modes. User can use it to setup the Shdsl.bis router quickly. After completing it successfully, you can access Internet or use a pair of Shdsl.bis Routers as LAN extenders. This is the easiest and quickest way to setup the router.

				G.Shdsl.bis
@BASIC		:: Info	Ready	
🗄 STATUS	-			
	•			INFORMATION
:2:ADMIN	-			
* UTILITY	-	De	evice Information	
© LOGOUT		Mod	lel Name	5210N
		HW	MCSV	145C-0000-00127243
		SW	MCSV	147A-0000-01227360
		Soft	tware Version	012
		Ethe	ernet MAC Address	00:E0:92:31:23:24
		Ser	ial Number	
		DSL	. Chip Name	PEF22628V1.2
		DSL	. Hardware Pair Number	2
		DSL	. Firmware Version	1.1-1.9.0001_eLP
		Sys	tem Current Time	2015/01/01 08:12:02
		Sys	tem Update Time	0 day 0 hr 12 min 21 sec

Click BASIC for basic installation.

						G.Shdsl.bis
⇔BASIC	:: Info	Ready				
					BASIC	
*UTILITY ·		G.SHDSL				
ঙ LOGOUT		Transfer Mode	PTM	•		
		Pair Mode	PAIR-1	-		
		STU Mode	STU-R	•		
		Multiplexing	VC	•		
		VPI				
		VCI				
		WAN				
		Mode	Routing	•		
		Encapsulation	PPPoE	•		
		WAN-IP				-
		IP Address Type	Dynamic	•		
		IP Address				
		Subnet Mask				
		Gateway IP Address]		
		LAN				-
		IP Address]		
		Subnet Mask				
		PPPoE				-
		User Name				
		Password				
		Note: Either the G.ShdsI mode or the VVA	N mode is changed, that The s	ystem wii	Eneed to reboot 1 Apply Cancel	

G.SHDSL

Item	Description		
Transfer Mode	Click on the drop-down list and select Transfer Mode as ATM (Asynchronous Transfer Mode) or PTM (Packet Transfer Mode).		
	ATM uses asynchronous time-division multiplexing, and encodes data into small, fixed-sized packets called cells.		
	SHDSL interfaces support Packet Transfer Mode (PTM). In PTM, packets (IP, PPP, Ethernet, MPLS, and so on) are transported over DSL links as an alternative to using Asynchronous Transfer Mode (ATM). PTM is based on the Ethernet in the First Mile (EFM) IEEE 802.3ah standard.		
	*Note: This mode is changed, the system will need to reboot.		
Pair Mode	Click on the drop-down list and select Pair Mode as Pair-1, Pair-2 or Pair-4.		
	Pair-1 for 2-Wire Shdsl.bis Router Pair-2 for 4-Wire Shdsl.bis Router		
STU Mode	Pair-4 for 4-Wire Shdsl.bis Router Click on the drop-down list and select STU Mode as STU-C or STU-R		
	STU-C means the terminal of central office and STU-R means customer		
	premise equipment. For point to point application, STU-C is the		
	server/master unit while STU-R is the client/slave unit.		
Multiplexing	Click on the drop-down list and select Multiplexing used by your ISP as VC or LLC.		
	VC-mux (VC-based Multiplexing): Each protocol is assigned to a specific virtual circuit. VC-based multiplexing may be dominant in environments where dynamic creation of large numbers of ATM VCs is fast and economical.		
	LLC (LLC-based Multiplexing): One VC carries multiple protocols with protocol identifying information being contained in each packet header. Despite the extra bandwidth and processing overhead, this method may be advantageous if it is not practical to have a separate VC for each carried protocol.		
	*This is available only when you select ATM as Transfer Mode.		
VPI	Enter the VPI (Virtual Path Identifier) range from 0 to 255.		
	*This is available only when you select ATM as Transfer Mode.		
VCI	Enter the VCI (Virtual Channel Identifier) range from 32 to 65535.		
	*This is available only when you select ATM as Transfer Mode.		
14/A NI			

WAN

Item	Description
Mode	Click on the drop-down list and select Mode as Routing or Bridge
	Choose Routing if your ISP provides you with only one IP address and you need several computers to use the same Internet account. Choose Bridge when your ISP provides you with more than one IP address and you need several computers to get individual IP address from your ISP's DHCP server. When Bridge is selected, NAT, DHCP server and Firewall become unavailable.
	*Note: This mode is changed, the system will need to reboot.
Encapsulation	Click on the drop-down list and select Encapsulation used by your ISP as PPPoE or RFC1483

WAN-IP

Item	Description							
IP Address Type	Click on the drop-down list and select IP Address Type as Static or Dynamic							
	A static IP address is a fixed IP provided by your ISP. A dynamic IP address is different every time when you connect to the Internet.							
IP Address	Enter IP address for WAN when select Static IP address Type.							
Submask	Enter a subnet mask in dotted decimal notation when select Static IP address Type.							
Gateway IP Address	Enter a gateway IP address provided by your ISP when select Static IP							

address Type.

LAN

Item	Description							
IP Address	Enter IP address for LAN							
Subnet Mask	Enter a subnet mask in dotted decimal notation when select Static IP address Type.							

When select PPPoE as Encapsulation, you are required to enter the User Name and Password provided by your ISP.

PPPoE

Item	Description					
User Name	Enter User Name provided by the ISP for PPPoE					
Password	Enter Password provided by the ISP for PPPoE					

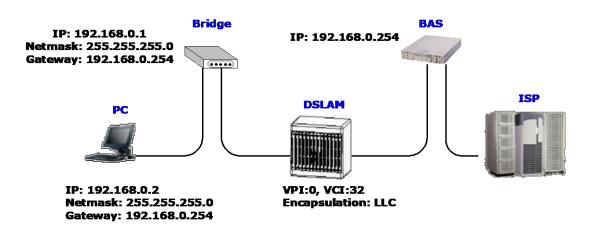
Info Ready	
•	
•	BASIC
G.SHDSL	
Transfer Mode	PTM •
Pair Mode	PAIR-1 •
STU Mode	STU-R •
WAN	
Mode	Bridge •
Encapsulation	PPPoE •
WAN-IP	
IP Address Type	Dynamic 🔹
IP Address	0.0.0
Subnet Mask	0.0.0
Gateway IP Address	0.0.0.0
LAN	
IP Address	192.168.5.20
Subnet Mask	255.255.0
PPPoE	
User Name	******
Password	2

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.1.1 Reference diagram

Bridge mode

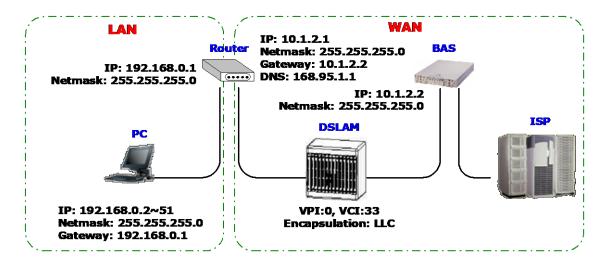
When configured in Bridge Mode, the router will act as a pass-through device and allow the workstations on your LAN to have public addresses directly on the internet.



EoA

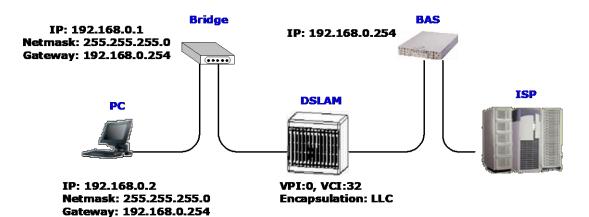
EoA (Ethernet-over-ATM) protocol is commonly used to carry data between local area networks that use the Ethernet protocol and wide-area networks that use the ATM protocol. Many telecommunications industry networks use the ATM protocol. ISPs who provide DSL services often use the EoA protocol for data transfer with their customers' DSL modems.

EoA can be implemented to provide a bridged connection between a DSL modem and the ISP. In a bridged connection, data is shared between the ISP's network and their customer's as if the networks were on the same physical LAN. Bridged connections do not use the IP protocol. EoA can also be configured to provide a routed connection with the ISP, which uses the IP protocol to exchange data.



PPPoE

PPPoE (point-to-point protocol over Ethernet) are authentication and connection protocols used by many service providers for broadband Internet access. These are specifications for connecting multiple computer users on an Ethernet local area network to a remote site through common customer premises equipment, which is the telephone company's term for a modem and similar devices. PPPoE can be used to office or building. Users share a common Digital Subscriber Line (DSL), cable modem, or wireless connection to the Internet. PPPoE combine the Point-to-Point Protocol (PPP), commonly used in dialup connections, with the Ethernet protocol or ATM protocol, which supports multiple users in a local area network. The PPP protocol information is encapsulated within an Ethernet frame or ATM frame.



4.2 STATUS

OVERVIEW

STATUS allows you to monitor the current status of the SHDSL.bis Router including basic software and hardware information, networking status, detailed packet statistics and G.SHDSL(WAN) status.

⊕BASIC						
≜ STATUS						
- Information						
🗢 Networking						
🗢 Packet Statistics						
G.SHDSL						
<pre>PADVANCED</pre>	•					
≗ADMIN	•					
* UTILITY	•					
⊚LOGOUT						

	Basic Device Information including Host Name, HW MCSV, SW MCSV, Software
Information	Version, MAC Address, Serial Number, DSL Chip information, System Time and
	System Update Time.
Networking	Current status of Network, DSL and Route Table.
Packet Statistics	System Status and Packet statistics for WAN port and LAN port.
G.SHDSL	Mode, Line rate and Performance information including SNR margin, atteunation
G.SHDSL	and CRC error count.

4.2.1 Information

STATUS > Information

				G.Shdsl.bis
BASIC		:: Info	Ready	
🗄 STATUS	-			
	-			INFORMATION
: ADMIN	+			
* UTILITY	-	De	vice Information	
⊚LOGOUT		Mod	lel Name	5210N
		HW	MCSV	145C-0000-00127243
		SW	MCSV	147A-0000-01227360
		Soft	ware Version	012
		Ethe	ernet MAC Address	00:E0:92:31:23:24
		Seri	al Number	
		DSL	. Chip Name	PEF22628V1.2
		DSL	Hardware Pair Number	2
		DSL	Firmware Version	1.1-1.9.0001_eLP
		Syst	em Current Time	2015/01/01 08:12:02
		Syst	em Update Time	0 day 0 hr 12 min 21 sec

INFORMATION page displays basic device information including Host Name, HW MCSV, SW MCSV, Software Version, Ethernet MAC Address, Serial Number, DSL Chip Name, DSL Hardware Pair Number, DSL Firmware Version, System Current Time and System Update Time.

4.2.2

STATUS > Networking

	Info	Ready						_						
	- mile	Reduy						_						
👜 STATUS 🔹 👻						OTATU								
						SIATU	JS - NET		JRNI	NG				
-											Refres	h Interval:	None	•)
*UTILITY +														
SLOGOUT		Network Status												
		Mode			Router									
		WAN IP			192.168.0.86									
		Netmask			255.255.255.0									
		Gateway			192.168.0.250									
		LAN IP			192.168.5.20									
		Netmask			255.255.255.0									
		Primary DNS			168.95.1.1									
		Secondary DNS			168.95.192.1									
		DSL Status												
		Transfer Mode			PTM									
		Server Type			STU-R									
		Standard Mode			ANNEX_B/G									
		DSL Status			Up									
		DSL UpRate			5696 kbps									
		DSL DownRate			5696 kbps									
		Route Table												
		Destination Gateway	GenMask			Metric			Iface					
		192.168.5.0 0.0.0.0	255.255.255.0			0			lan					
		192.168.0.0 0.0.0.0 0.0.0.0 192.168.0.250	255.255.255.0	UG		0			ptm0 default					
		0.0.0.0 192.108.0.200	10.0.0.0	JUG		μ		v	uerduit					

NETWORKING STATUS page displays Network Status, DSL Status and Route Table information

4.2.3 Packet Statistics

STATUS > Packet Statistics

⇔BASIC		Info	Ready			
≜ STATU S	-					
ADVANCED	-				STATUS - PACKET STATUS	
						Refresh Interval: None •
* UTILITY	•					
© LOGOUT			System Status			
		Ī	System Up Time		8 days 3 hr 35 min 34 sec	
			Current Date / Time		2016/05/03 12:39:25	
			CPU Usage		8%	
			Memory Usage		50%	
			WAN Port			
		Ī	Node	Status	Tx Tx Tx Tx Rx Rx Rx Rx B/s Up Packet Error B/s Packet Error Rx B/s Time	
			1-1483	Up	0 0 19297 0 0 49702889 1:15:08	
			LAN Port			
]	Interface	Status	Tx Rx Packet Collisions	
			Ethernet	100M/Full-Dup	lex 6592 5779 0	

PACKET STATUS page displays System Status and packet statistics for WAN port and LAN port.

-				
4.2.4	G.SHDSL			

STATUS > G.SHDSL

					G.Shdsl.bis
⇔BASIC		:: Info	Ready		
≜ STATUS	+				
@ADVANCED	-			STATUS - G.SH	DSL
& ADMIN	•				Refresh Interval: None
* UTILITY	•				
SLOGOUT		_	G.SHDSL Status		
		' [Ch Name	CPE/Ch-1	CO/Ch-1
		[State	CONNECTED	CONNECTED
			Annex	ANNEX-B/G	ANNEX-B/G
		Ī	TCLayer	EFM	EFM
		Ī	Line Rate	5696 kbps	5696 kbps
		Ī	SNR	18	19
		Ī	LoopAttn	0 dB	0 dB
		Ī	TxPower	8 dBm	8 dBm
		Ī	CRC	0	0
		-			

G.SHDSL STATUS page displays current status of DSL line including Channel Name, State, Annex, TCLayer, Line Rate, SNR, Loop Attenuation, TxPower and CRC.

4.3 Advanced Setup

OVERVIEW

Advanced setup includes SHDSL.bis, WAN, LAN, DNS, DHCP, VLAN, QoS, RIP, NAT/DMZ, Virtural Server, DDNS, Firewall, Content Filter, IGMP and SNTP.

Note: The advanced functions are only for advanced users to setup advanced functions. The incorrect setting of advanced functions will affect the performance or result system error, even disconnection.

BASIC	
≜STATUS	•
🗢 SHD SL.bis	
- WAN	
🗢 LAN	
🗢 DNS	
🗢 DHCP	
- VLAN	
🛥 QoS	
🗢 RIP	
🗢 NAT/DMZ	
🗢 Virtual Server	
🛥 DDNS	
🗢 Firewall	
🗢 Content Filter	
🗢 igmp	
L= SNTP	
::ADMIN	•
* UTILITY	•
©LOGOUT	

4.3.1 SHDSL.bis

ADVANCED>SHDSL.bis

								G.Shdsl.bis
⇔BASIC	ii Ir	fo Ready						
					A	DVANCED - SHDSL.bi	S	
- WAN		PAIR Type						
CO DAN CO DNS CO DHCP		Pair Mode	PAIR-4	•				
		Channel Config						
- RIP				Channel		-		
- NAT/DMZ		Mode Type		STU-R	•			
DDN 8 Firewall		Line Probe		Enable	•			
- Content Filter		Transfer Max Rate		5696	•	(Kbps)		
Lo sntP ⊕ADMIN ▼		Transfer Min Rate		192	•	(Kbps)		
*UTILITY •		Standard Mode		ANNEX_B/G	•			
00000		Modulation		AUTO	•]		
		The modulation AUTO Mode indicated TCPAM-64/128 dld not support Line Pro In TCPAM-64/128 will reset the value of ease The CPE modulation in TCPAM-16/32 will	be Disable! In channel					
						Apply Cancel		

Service Type

Item	Description
Pair Mode	Click on the drop-down list and select Pair Mode as Pair-1, Pair-2 or Pair-4.
	Pair-1 for 2-Wire Shdsl.bis Router Pair-2 for 4-Wire Shdsl.bis Router Pair-4 for 4-Wire Shdsl.bis Router

Pair Config

Item	Description
Mode Type	Click on the drop-down list and select STU Mode as STU-C or STU-R
	STU-C means the terminal of central office and STU-R means customer
	premise equipment. For point to point application, STU-C is the
	server/master unit while STU-R is the client/slave unit.
Line Probe	Click on the drop-down list and select Enable to enable Line Probe or Disable to disable Line Probe.
	For adaptive mode, you have to Enable Line Probe function. The router will
	adapt the data rate automatically according to the line status.
	Note: The TCPAM-64/128 did not support Line Probe Disable.
Transfer Max Rate	Select the maximum rate for sending and receiving data.
Transfer Min Rate	Select the minimum rate for sending and receiving data.
Standard Mode	There are four Annex types: Annex A (ANSI), Annex B (ETSI), Annex AF and
	Annex BG.
	Select the Standard Mode supported by your ISP.
	For point to point applications, you may choose one of the four types
	according to which line rate you need.
Modulation	Select the modulation supported by your ISP.
modulation	Select the modulation supported by your ISP.

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.2 WAN

ADVANCED>WAN

⇔BASIC	::	Info	Ready			
🛓 STATU S	•		-			
@ADVANCED	•					ADVANCED - WAN
- BHD BL.bis						
- LAN		Ge	eneral			
- DN 8		Tran	isfer Mode	PTM	•	
- DHCP						
- Q08		Ope	ration Mode	Routing	•	
RIP NATIONZ		Enci	apsulation	ENET ENCAP(RFC 1483) 🔽	
- Virtual Server		IP	Address			
- Firewall		Mod	le	OHCP State	tic IP	
- IOMP		Ac	lvanced			
	_	Mtu		1500		
*UTILITY	1	 Either 	r the Transfer mode or the Ope	ation mode is changed, that The	system will need to reboot !	
SLOGOUT						Apply Cancel

					G.Shdsl.bis
⇔BASIC	:: Info	Ready			
STATUS ADVANCED SHDBLbis				ADVANCED - WAN	
co WAN		General			
		Transfer Mode	PTM	•	
VLAN Q08	[Operation Mode	Routing	•	
RIP NAT/DMZ Virtual Server		Encapsulation	PPPoE	•	
- DDN 8		User Name	2		
- Firewall		Password			
- IOMP	.	IP Address			
	Ī	Mode	DHCP Static	IP	
*UTILITY ·		Advanced			
୭LOGOUT	Ī	Mtu	1500]
	•	Either the Transfer mode or the Operation n	ode is changed, that The sys	em will need to reboot!	1
				Apply Cancel	

General

Item	Description
Transfer Mode	Click on the drop-down list and select Transfer Mode as ATM (Asynchronous Transfer Mode) or PTM (Packet Transfer Mode).
	ATM uses asynchronous time-division multiplexing, and encodes data into small, fixed-sized packets called cells.
	SHDSL interfaces support Packet Transfer Mode (PTM). In PTM, packets (IP, PPP, Ethernet, MPLS, and so on) are transported over DSL links as an alternative to using Asynchronous Transfer Mode (ATM). PTM is based on the Ethernet in the First Mile (EFM) IEEE 802.3ah standard.
	Note: This mode is changed, the system will need to reboot.
Operation Mode	Click on the drop-down list and select Operation Mode as Routing or Bridge
	Choose Routing if your ISP provides you with only one IP address and you need several computers to use the same Internet account. Choose Bridge when your ISP provides you with more than one IP address and you need several computers to get individual IP address from your ISP's DHCP server. When Bridge is selected, NAT, DHCP server and Firewall become unavailable.
	Note: This mode is changed, the system will need to reboot.
Encapsulation	Click on the drop-down list and select Encapsulation used by your ISP as PPPoE or RFC1483
	When select PPPoE as Encapsulation, you are required to enter the User Name and Password provided by your ISP.
User Name	Enter User Name provided by the ISP for PPPoE
Password	Enter Password provided by the ISP for PPPoE
Service Name	Enter Service name for PPPoE

IP Address

Item	Description						
IP Address Type	Click on the drop-down list and select WAN IP Address Type as Static or Dynamic						
	A static IP address is a fixed IP provided by your ISP. A dynamic IP address is different every time when you connect to the Internet.						
IP Address	Enter IP address for WAN when select Static IP address Type.						
Submask	Enter a subnet mask in dotted decimal notation when select Static IP address Type.						
Gateway IP Address	Enter a gateway IP address provided by your ISP when select Static IP address Type.						

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.3	LAN
T.J.J	

ADVANCED>LAN

				G.Shdsl.	bis
BASIC		:: Info	Ready		
≜ STATUS	•				
@ADVANCED	•			ADVANCED - LAN	
& ADMIN	•				
*UTILITY	+		IP Setting	V	
⊚LOGOUT			LAN IP	192.168.5.20	
			Subnet Mask	255.255.255.0	
				Apply Cancel	

IP Setting

Item	Description
LAN IP	Enter IP address for LAN
Subnet Mask	Enter a subnet mask in dotted decimal notation when select Static IP address Type.

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

ADVANCED>DNS

					G.Shdsl.bis
⇔BASIC	:: Info Ready				
STATUS ADVANCED SHDBLbis WAN Lan	DNS Serv	/er		ADVANCED - DNS	
- DNS	DNS Source	Obtained From ISP	-]
- DHCP - VLAN	First DNS Server	0.0.0			
Qoš RIP	Second DNS Service	ver 0.0.0			
- NATIONZ - Virtual Server	Third DN\$ Serve	r 0.0.0.0			
- DDN 8 Firewall Content Filter				Apply Cancel	-
yo content Print					G.Shdsl.bis
⇔BASIC	:: Info Ready				
≜ STATU S • ⊘ADVANCED •				ADVANCED - DNS	
8HD 8L.bis WAN LAN	DNS Serv	er			
- DNS - DHCP	DNS Source	Obtained From ISP	-		
VLAN Gos	First DNS Server	Obtained From ISP			
	Second DNS Serv	er UserDefined DNS Relay			
- Virtual Server	Third DN\$ Server				
 Firewall Content Filter 		_		Apply Canoel	

DNS Server

Item	Description
First DNS Server	Click on the drop-down list and select below options for DNS Servers;
Second DNS Server	
Third DNS Server	Obtained From ISP : Select this option when your ISP dynamically assigns the DNS server information.
	User Defined : Select this option when you have the IP address of a DNS server.
	DNS Relay : Select this option when your ISP uses IPCP DNS server extensions and the SHDSL.bis Router acts as DNS proxy.

None : Select this option when you don't want to configure DNS servers.

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

ADVANCED>DHCP

						G.Shdsl.bis
BASIC		Info	Ready			
₫ STATUS	-	_		_		
@ADVANCED	-			Α	DVANCED - DHCP	
& ADMIN	•					
*UTILITY	•					
⊚LOGOUT			DHCP		Server •	
		1	P Pool Starting Address		192.168.5.33	
		F	Pool Size		32	
			_ease Time		300 Sec(s)	
		C	lient List			
		ł	Host Name	State	IP MA	C Expired Time
		S	Static DHCP			
		1	P Address		IP List 🔻	
		ſ	MAC Address		Add	
		S	Static List			
		1	P		MAC	
					Apply Cancel	

DHCP

Item	Description
DHCP	Click on the drop-down list and select below options for DHCP;
	None: Select this option to disable DHCP server.
	Server : Select this option when the router can assign IP addresses. Then enter the fields for IP Pool Starting Address, Pool Size and Lease Time. Relay : Select this option the router will relay DHCP requests and responses between the remote server and the clients. Then enter the field for Remote DHCP Server.
IP Pool Starting Address	Enter the 1 st address in the IP address pool.
	*This field is required only when you enable DHCP server.
Pool Size	Enter the size of IP address pool.
	*This field is required only when you enable DHCP server.
Lease Time	Enter the lease time for IP addresses.
	*This field is required only when you enable DHCP server.

Client List

The table displays the list and status of clients with their Host Name, State, IP address, MAC and Expired Time.

Static DHCP

Item	Description
IP Address	Enter IP address to change the static DHCP setting
MAC Address	Enter the MAC address of the Ethernet device.

Static List

The table displays IP addresses and MAC added to the Static DHCP list.

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.6

VLAN (Virtual Local Area Network) allows a physical network to be partitioned into multiple logical networks. Devices on a logical network belong to one group. A device can belong to more than one group. With VLAN, a device cannot directly talk to or hear from devices that are not in the same group.

With MTU (Multi-Tenant Unit) applications, VLAN is vital in providing isolation and security among the subscribers. When properly configured, VLAN prevents one subscriber from accessing the network resources of another on the same LAN.

VLAN also increases network performance by limiting broadcasts to a smaller and more manageable logical broadcast domain. In traditional switched environments, all broadcast packets go to each every individual port. With VLAN, all broadcasts are confined to a specific broadcast domain.

The IEEE 802.1Q defines the operation of VLAN bridges that permit the definition, operation, and administration of VLAN topologies within a bridged LAN infrastructure.

The router supports two types of VLAN: 802.1Q Tag-Based VLAN and Port-Based VLAN.

VID: (Virtual LAN ID) It is an definite number of ID range from 1 to 4094. PVID: (Port VID) It is an untagged member from 1 to 4094 of default VLAN.

ADVANCED>VLAN

																					G	i.She	dsl.	bis
⇔BASIC	:: Info		Ready																					
STATU S ADVANCED SHD 8Lbis												AD	VAN	ICE	ED - VL	AN								
- WAN - LAN		VLA	N Mod	е																				
	1	Mode					0	off 🤇	On															
- VLAN		Gro	up Cor	nfig																				
Go 8	Ī	Entry	VID	MGMT							LAN							WAN	I	Ī				
- NAT/DMZ	ļļ	No.				1	_		2	_	╞	3	_		4	_	┉	1	_	1				
- Virtual Server		1	1	۲		UnTag	•		UnTag	•		UnTag	•		UnTag	•		UnTag	-					
- Firewall - Content Filter	[2	0	\odot		UnTag	•		UnTag	•		UnTag	•		UnTag	•		UnTag	•]				
- IGMP	[3	0	\odot		UnTag	-		UnTag	•		UnTag	•		UnTag	-		UnTag	•]				
ADMIN .	' [4	0	0		UnTag	-		UnTag	-		UnTag			UnTag	-		UnTag	-]				
*UTILITY ©LOGOUT		5	0	0		UnTag	-		UnTag	-	┢	UnTag	-	┢	UnTag	-	┢	UnTag	-					
	ļ	6	0	0		UnTag	-		UnTag	-	T	UnTag	-	╞	UnTag	-	T	UnTag	-					
	Ì	7	0	0		UnTag	-		UnTag	-	T	UnTag	-	T	UnTag	-	Ť	UnTag	-	ĺ				
	Ì	8	0	0		UnTag	-	1 T	UnTag	-	T	UnTag	-		UnTag	-	T	UnTag	-	ĺ				
	Ì	9	0			UnTag	-		UnTag	-	T	UnTag	-		UnTag	-	T	UnTag	-	j				
	Ì	10	0	0		UnTag	-		UnTag	•		UnTag	•	Ī	UnTag	-	Ī	UnTag	•	j				
	ĺ	11	0			UnTag	-		UnTag	-		UnTag	•		UnTag	-	Ī	UnTag	•					
	ĺ	12	0			UnTag	-		UnTag	•		UnTag	-		UnTag	-	Ī	UnTag	-	ĺ				
	Ī		PVID		1			1				1			1			1		1				
			te:VID/PID The LAN / W			belong t	o valid en	ntry's VID.			-11													
													Apply		Canoel									

VLAN Mode

Item	Description
Active Mode	Active 802.1Q VLAN function
	On: Enable VLAN Configure
	Off: Disable VLAN Configure

Group Config (Summary Table)

Item	Description
Name	This field displays the name of the VLAN group
VID	This field displays the ID number for a VLAN group.
MGMT	Specify the selected VLAN group as manageable.
Port Number	The columns display the VLAN settings on each port.
	"Tag" for a tagged port. "UnTag" for an untagged port. "Not Group"for ports without VLAN settings.
PVID	This field displays the ID number of the VLAN group
	Note: The LAN/WAN's PVID need to belong to valid entry's VID.

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.7	QoS						
-------	-----	--	--	--	--	--	--

QoS is the function to decide the priorities of setting IPs to transfer packets under the situation of overloading bandwidth. Use QoS set up for traffic management of the SHDSL.bis router.

ADVANCED>QoS

			G.Shdsl.bi	is
⇔BASIC		Info Ready		
≜ STATUS	•			
<pre>PADVANCED</pre>	•	ADVANCI	ED - QoS	
& ADMIN	•			
* UTILITY	•	GENERAL CLASS SETUP		
SLOGOUT		QoS		
		Active QoS	8	
		WAN Managed Bandwidth	100000 (kbps)	
		Setting Traffic priority by		
		1. Ethernet Priority & IP Precedence	ON •	
		2. Packet Length	ON •	
		Apply	Cancel	

General

QoS

Item	Description			
Active QoS	Active QoS for traffic management			
WAN Management Specify the bandwidth allocated to WAN using QoS. Bandwidth Specify the bandwidth allocated to WAN using QoS.				
	Matching the bandwidth to WAN's actual speed is recommended.			
Ethernet Priority & IP Precedence	This field is not effective when traffic matches the class configured under CLASS SETUP .			
	When select ON and traffic doesn't match the class configured under CLASS SETUP , the router assigns priority to unmatched traffic based on IEEE			

	802.1p priority level, IP precedence.
	When select OFF, unmatched traffic is mapped to Queue Two.
Packet Length	This field is not effective when traffic matches the class configured under CLASS SETUP .
	When select ON and traffic doesn't match the class configured under CLASS SETUP , the router assigns priority to unmatched traffic based on IEEE 802.1p priority level, Packet Length.
	When select OFF, unmatched traffic is mapped to Queue Two.

When select OFF, unmatched traffic is mapped to Queue Two. Click on Apply to save the parameters or Cancel to start configuring this page from beginning. CLASS SETUP

										G.Shdsl.bis
			::Info	R	teady					
≜ STATU S		-		_	_					
ADVANC	ED	-		GENE	RAL	CLASS SETUP				
		•								
* UTILITY		•		Class	s Setup					
⊚LOGOUT				Add a new Class :			Add			
				No	Active	Name	Interface	Priority	Modify	
				1		TEMP	From LAN	0	l Cü	
								Apply	Cancel	

Click on Add to create a new class

			0.5/143/15
ASIC	Info Heady		
TATUS +			ADVANCED - QoS
VANCED +			ADVANCED - QOS
VAN			
UNI NS	Class Configuration		
UICP 6AN	Active		
205	Narra	TBNP	
IP IATIONZ		TBO	
cual Server	Interface	UN Side	
NS	Phonty	0 (izwet)	
rave liter 19			
र व	Order	4 🗸	
• •	Tag Configuration		
- 2001	USC! Value	an v	
	802.10 Feg	im v	
	Filter Configuration		
	Address 0.0	0 Subnet Netmark 255.255.255	
	Port		
	MAC DOG		
	Destination		
		Subnet Netmask 255,255,255	
	Address 0.0	5 Subnet Netmask 255.255.255	
	Port 0	~ C Endude	
	MAC 000	00.00.00 MAC Mask minimizing	
	Others		
	Service	P 💌	
	Protocol	D exclude	
	Packet Longth 0		
	0 0507 0	(0~65) trojuđe	
	Ethernet Priority	44 v Exclude	
	VUNID 0	(1~4094) txdude	
	Physical Port	Exclude	
	L		t Sawa Cancal

Class Configuration

Item	Description		
Active	Activate the classifier		
Name	Enter the name of the classifier		
Interface	Only from LAN Side for the traffic of the classifier		
Priority	Assign priority to the traffic of the classifier		
Order	Ordering number of the classifier		

Tag Configuration

Item	Description
DSCP Value	Select Same to keep the DSCP field in the packets.
	Select Auto to map the DSCP value to 802.1 priority level automatically
802.1Q Tag	Select Same to keep the priority setting and VLAN ID of the frames.
	Select Auto to map 802.1 priority level to the DSCP value automatically

G.Shdsl.bis

Filter Configuration

Item	Description			
Active	Activate the classifier			
Name	Enter the name of the classifier			
Interface	Select from WAN or from LAN for the traffic of the classifier			
Priority	Assign priority to the traffic of the classifier			
Order	Ordering number of the classifier			

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.8	RIP			

RIP (Routing Information Protocol) allows one router to exchange routing information with another.

ADVANCED>RIP

										G.Sh
⊗BASIC		:: Info	Ready							
₫ STATUS	•									
ADVANCED	•		ADVANCED - RIP							
ADMIN	•									
* UTILITY	•		RIP Entry	Direction	Version	Passivo	AuthType	AuthCode	SpiltHorizon	Modify
⊚LOGOUT			#	Direction	Version	Fassive	Authrype	AutilCode	SplitHorizon	Moully
		1	1	Off	V2	Off	None	-	On	ß
			2	Off	V2	Off	None	-	On	ß

Click Modify to edit each entry information

RIP>Entry Config

				G.Shdsl.bis
△BASIC		:: Info	Ready	
≜ STATUS	•			
@ADVANCED	•		ADVA	NCED - RIP
& ADMIN	•			
* UTILITY	•		Entry Config	
SLOGOUT			No.	1
			Direction	Off •
			Version	V2 •
			Auth Type	None 🔻
			Auth Code	
			Spilt Horizon	On •
			Back	Apply

Entry Config

Item	Description				
Direction	Select Directions from:				
	Off: No RIP packets will be sent, and incoming RIP packets will be ignored				
	Both: Routing table will be broadcasted periodically and incorporated				
	received information from both direction				
	In Only: Only RIP information received will be incorporated				
	Out Only: Only broadcast device's routing table periodically				

Version	Version Select from:	
	RIP-V1 : Only sends RIP v1 messages only	
	RIP-V2 : Sends RIP v2 messages in multicast and broadcast format	
Auth Type	Select from (1)Simple (2)MD5	
Auth Code	Enter the Corresponded Authentication Code for the Type picked above	
Split Horizon	Enable or Disable Split Horizon feature	

Click Apply to save the parameters changed or Back to return to previous page

4.3.9 NAT/DMZ

NAT (Network Address Translation) is the translation of an Internet Protocol address (IP address) used within one network to a different IP address known within another network. One network is designated the inside network and the other is the outside. Typically, a company maps its local inside network addresses to one or more global outside IP addresses and reverse the global IP addresses of incoming packets back into local IP addresses. This ensure security since each outgoing or incoming request must go through a translation process, that also offers the opportunity to qualify or authenticate the request or match it to a previous request. NAT also conserves on the number of global IP addresses that a company needs and lets the company to use a single IP address of its communication in the Internet world.

DMZ (Demilitarized zone) is a computer host or small network inserted as a "neutral zone" between a company private network and the outside public network. It prevents outside users from getting direct access to a server that has company private data.

In a typical DMZ configuration for an enterprise, a separate computer or host receives requests from users within the private network to access via Web sites or other companies accessible on the public network. The DMZ host then initiates sessions for these requests to the public network. However, the DMZ host is not able to initiate a session back into the private network. It can only forward packets that have already been requested.

Users of the public network outside the company can access only the DMZ host. The DMZ may typically also have the company's Web pages so these could serve the outside world. However, the DMZ provides access to no other company data. In the event that an outside user penetrated the DMZ host's security, the Web pages might be corrupted, but no other company information would be exposed.

			G.Shdsl.bis
⇔BASIC		IIInfo Ready	
≜ STATUS	•		
@ADVANCED	•		ADVANCED - NAT/DMZ
	-		
* UTILITY	.	NAT v.s DMZ Setup	
SLOGOUT		NAT/DMZ Mode	Enable Disable
		DMZ Host	0.0.0
			Apply Cancel

ADVANCED>NAT/DMZ

NAT vs. DMZ Setup

Item	Description
NAT/DMZ Mode	Select to Enable or Disable NAT/DMZ mode

DMZ Host	Assign IP address for the DMZ Host
----------	------------------------------------

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.10 Virtual Server

ADVANCED>Virtual Server

								G.S	Shds	sl.bis
BASIC		:: Info	Ready							
≜ STATUS	•									
@ADVANCED	•			ADVANCED - VIRTUAL SERVER						
& ADMIN	•									
* UTILITY	•	· ·	Virtual Server							
⊚LOGOUT			Service Nar	me			www •			
			Server IP A	ddress				Set from DHCP 🔹)	
							Add			
			Entry List							
			# Active		Service Name		Port Range	•	Server IP	Action
						Apply	Cancel			

Virtual Server

Item	Description			
Service Name	Select the desired Service name from the drop down list with predefined parameters or manually define the Service with corresponded IP address and Port range.			
Server IP Address	Specify the IP address of the Service's Hosting Server			

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.11 DDNS

ADVANCED>DDNS

				G.Shdsl.bis
BASIC		:: Info	Ready	
≜ STATUS	•			
@ADVANCED	•		ADVAN	ICED - DDNS
ADMIN	•			
* UTILITY	+	.	DDNS	
ℕLOGOUT			Enable	○ On ● Off
		J	Provides	www.DynDNS.org
			Service Type	Dynamic DNS V
			Host Name	
			User Name	
			Password	
			Enable Wildcard	
			IP Policy	Use WAN IP Address 🔹
			Specified IP Address	0.0.0.0
			Apply	Cancel

DDNS

Item	Description			
Enable	Select On to enable or Off to disable DDNS function			
Providers	Drop down menu to select desired DNS service provider			
Service Type	Select the type of service you have registered with your DDNS service provider. It can be one of the following:			
	Dynamic DNS:			
	Static DNS:			
	Custom DNS:			
Host Name	Domain name assigned to the device by the DDNS provider			
User Name	Username for the registered DDNS service provider			
Password	Password for the registered DDNS service provider			
Enable Wildcard	Check the box to enable Wildcard feature			
IP Policy	Use WAN IP Address : Update the IP address of the Host Name with the WAN IP address			
	Server Auto Detect : This allows DDNS server to automatically detect and use the IP address of the NAT router that has a public IP address. Note : <i>therefore, select this option only when there is at least one NAT router available in-between device and DDNS server</i> Specified IP Address : Specify a static IP address for the Host Name.			
Specified IP Address	Input the static IP address for the Host Name if IP Policy is selected with Specified IP Address option.			

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.12 FIREWALL

ADVANCED>FIREWALL

						G.Shdsl.bis		
⊳BASIC		:: Info	Ready					
≜ STATUS	•							
@ADVANCED	-		AC	VANCE	ED - FIREWALL			
& ADMIN	•							
* UTILITY	+	.	Firewall Setup					
⊚LOGOUT			Firewall Settings		OFF	0 ON		
		J	Generall Rule					
			Protection DoS Attach Stateful Firewall (SPI) Protection Enclosed TCP/UDP opened session val	id				
				Apply	Cancel			

Firewall Setup

Item	Description
Firewall Settings	Select OFF to disable Firewall, or ON to enable Firewall

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.3.13	Content Filter
4.3.13	

Content Filter allows you to limit access to specific websites based on keywords in the URL

ADVANCED>Content Filter

BASIC	a Info Rea	ady		
STATUS • ADVANCED •			ADVANCED - CONTE	INT FILTER
BHD BL.bis				
= WAN	Url Filt	er		
O DN8	Mode	Off	On	
⇒ DHCP ⇒ VLAN	Filter C	Config	I.	
- Qo 8		Mode	Keyword	
⇔ RIP ⇔ NAT/DMZ	1	Off ^O On	max 64 characters	
- Virtual Server - DDNS	2	● Off [©] On	max 64 characters	
 Firewall Content Filter 	3	● Off [©] On	max 64 characters	
- IGMP - SNTP	4	Off ^O On	max 64 characters	
ADMIN •	5	Off [©] On	max 64 characters	
	6	Off [©] On	max 64 characters	
	7	Off [©] On	max 64 characters	
	8	Off [©] On	max 64 characters	
	9	Off [©] On	max 64 characters	
	10	Off ^O On	max 64 characters	
	11	Off ^O On	max 64 characters	
	12	Off ^O On	max 64 characters	
	13	Off ^O On	max 64 characters	
	14	● Off [©] On	max 64 characters	
	15	● Off [©] On	max 64 characters	
	16	Off ^O On	max 64 characters	
	 The Content k 	eywards is major point out in the address of the	URL1	

Url Filter

Item	Description	
Mode	Select OFF to disable Content Filter, or ON to enable Content Filter feature	

Filter Config

Item	Description	
Mode	Turning Off or On of the selected Filter condition	
Keyword	Specify the desired keywords to be filtered with	

4.3.14

IGMP (Internet Group Multicast Protocol) is a network layer protocol which is used to establish membership in a Multicast group.

ADVANCED>IGMP

G Shdsl his

			G.Shdsl.bis
BASIC		Info Ready	
≜ STATUS	•		
⊘ADVANCED	•		ADVANCED - IGMP
	•		
* UTILITY	Ψ.	IGMP	
⊚LOGOUT		Mode	None V
			Apply Cancel

IGMP

Item	Description
Mode	Select from the drop down menu for desired IGMP modes:
	None: Don't support any of the IGMP
	IGMP-v1: Support only version1
	IGMP-v2: Support only version2
	IGMP-v3: Support only version3
	IGMP-all : Support all the available versions

4.3.15 SNTP

ADVANCED>SNTP

- SNTP
- SNTP
9
: 11 : 00
/ 05 / 09
m Time Server
C-1305) 🔻
t.gov
:00) Greenwich Mean Time : Dublin Edinburgh, Lisbon, London 🔹
Sunday of January (2017-01-01) at
o'clock
Sunday
o'clock

Time Setup

Item	Description	
Current Time (hh:mm:ss)	Display current system time	
Current Date	Display current system date	
(yyyy-mm-dd)		
	*Manual	
New Time (hh:mm:ss)	Manually define the new time	
New Date (yyyy/mm/dd)	Manually define the new date	
	*Get from Time Server	
Time Protocol	Time protocol used to communicate with Time server	
Time Server Address Specify the IP address or URL of the Time server		
Time Zone	Specify the Time zone	
Daylight Savings	Check box to enable Daylight Savings function	
Start Date	Specify the date when daylight saving starts	
End Date	Specify the date when daylight saving ends	

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.1 ADMIN

Overview

Administration session introduces security and management features (SNMP, WWW, TELNET, SSH) of the SHDSL.bis router.

⇔BASIC	
≜ STATUS	-
<pre>PADVANCED</pre>	-
seADMIN	
∀UTILITY	•
© LOGOUT	

4.1.1 Security	
----------------	--

ADMIN>SECURITY

					G.Shdsl.bis
BASIC		:: Info	Ready		
🗄 STATUS	-				
ADVANCED	-			ADMIN - S	SECURITY
-2: ADMIN	*				
		-	System Setup		
	+		system Host Name	ѕоно	(Max:60)
© LOGOUT		ſ)omain Name	soho	(Max:24)
		1	uthentication Timeout	5	minute(s)
			ie character support [A-Z], [a-z], [0-9], System Password	[-(dash) , _(under-line)]	
		I	evel	Admin ~	
		4	dmin Password		
		F	Retype Admin Password		
				Apply	Cancel

System Setup

Item	Description		
System Name	Enter desirable System/Host Name		
Domain Name	Enter desirable Domain Name		
Authentication Timeout	Enter desirable Authentication Timeout period in minutes		
Note: The character support [A, 7] [a, 7] [0, 0] [(underline) (deph) (det)]			

Note: The character support [A-Z], [a-z], [0-9], [_(underline), -(dash), .(dot)]

System Password

Item	Description
Admin Password	Enter Password
Retype Admin Password	Enter Password again for confirmation

For system security, please change the default password in the first setup otherwise unauthorized persons can access the router and change the parameters. If you don't change it, all users on your network can access the router using the default password: "**root**".

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

4.1.2

ADMIN>MGMT

		G.Shdsl.bis
	Info Ready	ADMIN - MANAGEMENT
©LOGOUT	SNMP Port Access Status SNMP Configuration	
	Get Community Set Community Trap Community	public private public private
	Trap Destination	
		Apply Cancel
4	.1.2.1 SNMP	

Simple Network Management Protocol (SNMP) defines the exchange of messages between a network management client and a network management agent for remote management of network nodes. These messages contain requests to get and set variables that exist in network nodes in order to obtain statistics, set configuration parameters, and monitor network events. SNMP communications can occur over LAN or WAN connection.

The router can generate SNMP traps to indicate alarm conditions, and it relies on SNMP community strings to implement SNMP security. The SHDSL.bis routers support SNMPv1/SNMPv2 (RFC 1157/1901/1905) and MIB-II (RFC 1213/1493)

Click SNMP to configure the parameters for remote management via SNMP.

SNMP

Item	Description
Port Enter port number for the SNMP service	
Access Status	Click on the drop-down list and select ALL to allow the service or Disable WAN to disable the remote management service

SNMP Configuration

Item	Description
Get Community	Enter the password for the incoming Get and Get Next requests from the management station. The default is public which allows all requests.
Set Community	Enter the password for the incoming Set requests from the management station. The default is public which allows all requests.
Trap Community	Enter the password sent with each trap to the SNMP manager. The default is public which allows all requests.
Trap Destination	Enter the IP address of the station to send SNMP traps

Click on Apply to save the parameters or Cancel to start configuring this page from beginning.

400	14/14/14/		
4.1.Z.Z	WWW		

Click WWW to configure the parameters for remote management via WWW

											G.S	Shdsl	.bis
 		:: Info	Ready										
≜ STATUS	•									_			
@ADVANCED	•					ADI	MIN - M	IANA	GEMEN.	Г			
& ADMIN	•												
* UTILITY	•	SN	MP WWW	TELNET	SSH								
©LOGOUT		w	ww										
		P	ort				80						
		A	ccess Status				ALL	•					
							Apply	Cancel					

WWW

Item	Description
Port Enter port number for remote management via WWW	
Access Status	Click on the drop-down list and select ALL to allow the service or Disable WAN to disable the remote management service

|--|

Click TELNET to configure the parameters for remote management via TELNET

			G.Shdsl.bis
@BASIC		:: Info Ready	
🗄 STATUS	•		
@ ADVANCED	•		ADMIN - MANAGEMENT
	*	SNMP WWW TELNET	SSH
* UTILITY	•	Telnet	
©LOGOUT		Port	23
		Access Status	Disable WAN 🗸
			Apply Cancel

TELNET

Item	Description					
Port	Enter port number for remote management via TELNET					
Access Status	Click on the drop-down list and select ALL to allow the service or Disable					
WAN to disable the remote management service						
Defeute The TELNET ellow especially from LAN side only						

Default: The TELNET allow accessible from LAN side only.

Click SSH to configure the parameters for remote management via SSH

				G.Shdsl.bis
⊕BASIC		:: Info Ready		
🗄 STATUS	•			
	•		ADMIN - MANAGEMENT	
& ADMIN				
- SECURITY - MGMT		SNMP WWW TELNET	SSH	
* UTILITY	•	SSH		
© LOGOUT		Port	22	
		Access Status	Disable WAN 🗸	
			Apply Cancel	
SSH				

Item	Description				
Port	Enter port number for remote management via SSH				
Access Status	Click on the drop-down list and select ALL to allow the service or Disabl				
	WAN to disable the remote management service				
Default: The SSH allow accessible from LAN side only.					

4.2	Utility						
-----	---------	--	--	--	--	--	--

Overview

This section describes the utility of the SHDSL.bis router including:

SYSTEM LOG	Capturing log information					
SYSTEM TOOL	Backup and restore configuration, and load the factory default					
STSTEM TOOL	configuration					
UPGRADE	Upgrade the firmware					

RESTART	Restart the router.					
≜ STATUS	•					
ØADVANCED	•					
	•					
* UTILITY	A					
SYSTEM LOG						
SYSTEM TOOL						
- UPGRADE						
SLOGOUT						

4.2.1	1 SYS	TEM LOG	
	4211	SYSTEMLOG	

UTILITY>SYSTEM LOG

Г

									G.Shds	sl.bis
⇔BASIC		: Info	Ready							
≜ STATUS										
ADVANCED						UTILII	Y - SYS	TEM LOG		
& ADMIN	-									
* UTILITY		SY	SLOG VIEW	SYSLOG SERVER SE	ETTING					
SYSTEM LOG										
SYSTEM TOOL		S	ystem Log							
			All Logs 🔻			Refresh		Clear Log		
© LOGOUT			# DateTime	۵	Messages	۵	Note	s 🌣		

SHDSL.bis routers support detailed logging information via System Log function. The system log protocol allows devices to send event notification messages across an IP network to syslog servers that collect the event message. The router can generate a syslog message and send it to a syslog server.

You may click Refresh to renew the Sytem Log page or Clear Log to delete all log information.

	4.2	2.1.2	SYSTE	M LOG Se	rver	Setting	
							G.Shdsl.bis
	# Info	Ready					
👜 STATUS 🔹					ITV		
@ ADVANCED	·			UIIL	.I I Y	- SYSLOG SERVER SETTING	
ADMIN •		SYSLOG VIEW	SYSLOG SER	VER SETTING			
* UTILITY	•						
SYSTEM TOOL		Syslog Serve	r Setting				
		Active					
ତ LOGOUT		Syslog IP Address			(Serve	r Name or IP Address)	
		Log Facility		Local 1	•		
						Apply Cancel	
SYSLOG Se	erver	Setting					
It	tem					Description	
Ac	Activate the syslog server						

Syslog IP Address	Enter IP address for syslog server				
Log Facility The log facility allows you to log the messages to different files in the sy					
	server. Refer to the documentation of your syslog program for more details.				
Priority	Assign priority to the traffic of the classifier				
Order	Ordering number of the classifier				

4.2.2	System Tool	

UTILITY>SYSTEM TOOL

						G.Shds	51.
BASIC		:: Info	Ready				
≜ STATUS	•						
ØADVANCED	•			UTI	LITY - SYSTEM TOOL		
2:ADMIN	•						
* UTILITY	•	ī	Backup			_	
©LOGOUT			Click Backup to download config file				
		í –	Backup				
			Restore			_	
			File Path		谢文 Upload		
		ĺ	Progress)%		
				r. After restor	e settings completed, the DSL router will reboot and go to		
			Factory Default			_	
			Click Reset to reset factory settings.				
			Reset				

System Tool provides three main functions: Backup Configuration, Restore Configuration and Load Factory Default settings.

Click Backup to save config.cfg in your computer.

To restore a previously saved config file from your computer. Click Browse to select the file and then click Upload.

Click Reset to load factory default settings to the router. A warning message will appear. Confirm by clicking on OK.

4.2.3 Upgrade

UTILITY>UPGRADE

					G.Shdsl.	b
@BASIC		:: Info	Ready			
≜ STATUS	•					
@ADVANCED	•			UTILITY - UPGRADE		
	-					
* UTILITY	-		Firmware Upgrade		-	
SLOGOUT			Firmware Version	5242-0000-01220160422		
8206001			File Path	Upload]	
			Progress	0%		
				de. After the F/W upgrade completed, the SHDSL router will turn		
			to Login page.			
					-	

You can upgrade the SHDSL.bis router using the upgrade function.

Click Browse to select the firmware file and then click Upload. The system will reboot automatically after finish the firmware upgrade operation.

4.2.4	Restart	
-------	---------	--

UTILITY>RESTART

			G.Shdsl.bis
@BASIC		Info Ready	
🗄 STATUS	•		
@ADVANCED	•	UTILITY - RESTART	
	-		
* UTILITY	-	System Reboot	=
⊚LOGOUT		Click Restart to reboot device, waiting a minute and will redirect to Login page.	
		Restart	

Use RESTART to reboot the SHDSL.bis router.

Click on Restart to reboot the system.

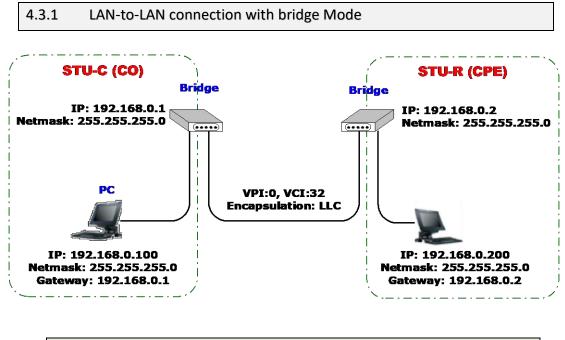
4.3 LOGOUT

Overview

To logout the router, click on LOGOUT. A warning message will appear. Confirm by clicking on OK.

⊕BASIC	
≜ STATUS	•
<pre>@ADVANCED</pre>	•
	•
* UTILITY	•
⊚LOGOUT	

Example



4.3.1.1 CO side

Click Bridge and CO Side to setup Bridging mode of the Router and then click Next.

			Admin	Utility
		BASIC -	STEP1	
• CO Side	O CPE Side			
	Ca	incel Rese	t Next	1
		C ROUTE BRIDGE C CO Side C CPE Side	C ROUTE BRIDGE C CO Side C CPE Side	CO Side CPE Side

Home	Basic	Advanced	Status	Admin	Utility
			BASIC -	STEP2	
LAN:					
LAII.					
IP Addre	ss: 192 . 16	58.0.1			
Subnet Ma	sk: 255 . 25	55 . 255 . 0			
Gatew	ay: 192 . 16	58 . O . [1]			
Host Na	ne: SOHO				
WAN1:					
VPI: O					
VCI: 3	2				
Encap.: (VC-mux 🖲 LL	.C			
<u>a</u>					
		Back	Cancel	Reset	Next

Enter LAN Parameters IP: 192.168.0.1 Subnet Mask: 255.255.255.0 Gateway: 192.168.0.1 Host Name: SOHO

Enter WAN1 Parameters

VPI : 0
VCI: 32
Click LLC
Click Next

The screen will prompt the new configured parameters. Check the parameters and Click Restart The router will reboot with the new setting.

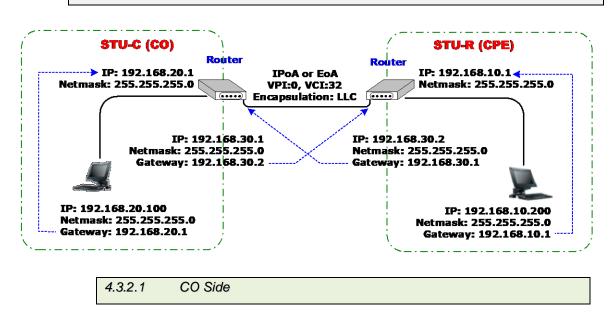
4.3.1.2	CPE Side
Click Bridge and CPE Sic	de to setup Bridge mode of the Router and then click Next.
Home Basic Advance	
	BASIC - STEP1
Operation Mode:	
System Mode: C ROUTE © BRIDGE SHDSL Mode: C CO Side © CPE S	
	Cancel Reset Next
Home Basic Advanced	l Status Admin Utility
	BASIC - STEP2
LAN:	
IP Address: 192 . 168 . 0 Subnet Mask: 255 . 255 . 255 Gateway: 192 . 168 . 0 Host Name: SOHO	. <mark>2</mark> . 0 . 2
WAN1:	
VFI: 0 VCI: 32 Encep.: C VC-mux © LLC	
Back	Cancel Reset Next

Enter LAN Parameters IP: 192.168.0.2 Subnet Mask: 255.255.255.0 Gateway: 192.168.0.2 Host Name: SOHO

Enter WAN1 Parameters VPI: 0 VCI: 32 Click LLC Click Next

The screen will prompt the new configured parameters. Check the parameters and Click Restart The router will reboot with the new setting.





Click ROUTE and CO Side to setup Routing mode of the Router and then click Next

Home	Basic	Advanced	Status	Admin	Utility
		1	BASIC -	STEP2	
LAN:					
	IP Address: 192	. 168 . 0	. 1		
2	Subnet Mask: 255	. 255 . 255	. 0		
	Host Name: SOH	0			
Trigger D	HCP Service: C D	isable 💿 Enable	6		
		Back	Cancel	Reset	Next

Type LAN parameters: IP Address: 192.168.20.1 Subnet Mask: 255.255.255.0 Host Name: SOHO DHCP Service: Disable or Enable For more DHCP service, review the chapter on DHCP Service Home Basic Advanced Status Admin Utility

		B	ASIC	- STEP	4
WAN1:					
VPI:					
VCI: AAL5 Encap:					
Protocol	IPoA IPoA IPoA+NAT				
	EoA EoA+NAT PPPoA+NAT	Back	Cancel	Reset	Next
	PPP0E+NAT				

Type the **WAN1** Parameters; **VPI**: 0

VCI: 32 AAL5 Encap: LLC Protocol: EoA or EoA + NAT Note: The Protocol used in CO and CPE have to be the same. Click Next to setup the IP parameters.

For more understanding about **NAT**, review the chapter of NAT/DMZ.

Home	Basic	Advanced	Status	Admin	Utility
		B	ASIC -	STEP5	
AN1:					
IP Address:	10 . 1	. 2.1			
Subnet Mask:	255 . 25	5 . 255 . 0			
Gateway:	10 . 1	. 2 . 2			
DNS Server 1:	168.95.1.1				
DNS Server 2:					
DNS Server 3:					
		Back	Cancel	Reset	Next
Address	: 192.1	68.20.1			
			0		
ionet Ma	ISK: 255	5.255.255.	0		

Subnet Mask: 255.255.255.0 Gateway: 192.169.30.2 Click Next

The screen will prompt the parameters that we will write in NVRAM. Check the parameters before writing in NVRAM.

Press Restart to restart the router working with new parameters or press continue to setup another parameter.

	4.3.2.2	CPE side				
Click ROUTE	and CPE S	ide then pres	s Next.			
	asic Advanc		Admin	Utility		

Home	Basic	Advanced	Status	Admin	Utility
		1	BASIC -	STEP1	
Operation Mo	de:				
System M	ode: © ROUTE	C BRIDGE			
SHDSL M	ode: O CO Side	CPE Side			
÷					
		Ca	incel Rese	t Next	

Home	Basic	Advanced	Status	Admin	Utility
		1	BASIC -	STEP2	
LAN:					
	IP Address: 192	. 168 . 0	. 1		
2	Subnet Mask: 255	. 255 . 255	. 0		
	Host Name: SO	HO			
Trigger D	HCP Service: C [Disable 💿 Enable			
		Back	Cancel	Reset	Next
Type LAN	l paramet	ters:			

IP Address: 192.168.10.1 Subnet Mask: 255.255.255.0 Host Name: SOHO DHCP Service: Disable or Enable For more DHCP service, review the chapter of DHCP Service.

Type the WAN1 Parameters:

Home	Basic	Advanced	Status	Admin	Utility
			BASIC -	STEP4	
WAN1:					
VI	PI: O				
VC	I: 32				
AAL5 Enca	p: O VC-mux	• LLC			
Protoc	ol: IPoA IPoA IPoA+NAT EoA	Back	Cancel	Reset	Next
	E0A+NAT PPP0A+NA PPP0E+NA	νT	Cancer	riesei	NEXI
VPI : 0					
VCI: 32					
AAL5 End	ap: LLC				
Protocol:	EoA or	EoA + NA	Т		
Note: The	Protoco	l used in C	CO and C	PE have	to be the
	1				

Click Next to setup the IP parameters.

For more understanding about NAT, review the chapter of NAT/DMZ.

Home	Basic	Advanced	Status	Admin	Utility
		E	ASIC -	STEP5	
WAN1:					
IP Address: Subnet Mask: Gateway: DNS Server 1: DNS Server 2: DNS Server 3:	255 . 25 10 . 1 168.95.1.1	. 2 . 1 5 . 255 . 0 . 2 . 2			
		Back	Cancel	Reset	Next
IP Address	s : 192.1	68.30.2			
Subnet ma	sk : 255	5.255.255.	0		
Gateway: 1	92.169	.30.1			
Click Next					

The screen will prompt the parameters that we will write in NVRAM. Check the parameters before writing in NVRAM.

Press Restart to restart the router working with new parameters or press continue to setup another parameter.

5 Configuration via Serial Console or Telnet

In this section, the basic of console line configuration will be described on below.

5.1	5.1 Introduction		
	5.1.1	Serial Console	

Check the connectivity of the RS-232 cable. Connect the male 9-pin end of console port of the router and connect the female end to a serial port of your computer.

Start your terminal access program by VT100 terminal emulation with the following parameters:

Parameter	Value
Baudrate	9600bps
Data Bits	8
Parity Check	No
Stop Bits	1
Flow-control	No

Press the SPACE key until the login screen appears. When you see the login screen, you can logon to Router.

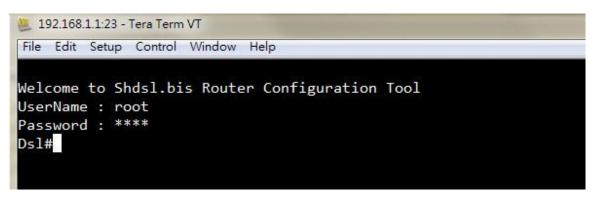
5242-0000-1220160511
Beta r400
Wed May 11 05:34:57 UTC 2016
Welcome to Shdsl.bis Router Configuration Tool
Welcome to Shdsl.bis Router Configuration Tool UserName : root

Note: Only SPACE key invoke the login prompt. Pressing other keys does not work.

Note: The factory default **User** and **Password** are "root" for both.

5.1.2	Telnet		

Make sure the correct Ethernet cable connected the LAN port of your computer to this Router. The LAN LNK LED indicator on the front panel shall light if a correct cable is used. Starting your Telnet client with VT100 terminal emulation and connecting to the management IP of Router, wait for the login prompt appears. Input User and Password after login screen pop up,



User: Password: **** root

Note: The default IP address is 192.168.0.1.

5.2 Main menu

When enter to prompt screen, you can input command ? to view the available top level menus of each command set:

For example: type ? after the #, will display the current level of available command sets as below:

Dsl#?	
config	enter submenu system
status	enter submenu status
show	enter submenu information
utility	enter submenu utility
reboot	reboot system
quit	logout
Dsl#	

Top level Command set Description:

Command	Description
	Config parameters of router by entering submenu:
	network
config	advance
	mgmt
	exit
status	View the status of router.
show	Show the system and configuration of router.
utility	Upgrade software and backup and restore configuration.
	Reset and boot system. After you have completed all necessary setting,
reboot	make sure to apply the new configuration to NVRAM and reboot the system,
	otherwise, all of your changes will not take effect.
quit	Quit system.

