

Zhone Bonded Channel

User Manual Version 1.1

Version Date: February 16, 2007 Document #: BD-ZU0007-11

FCC Warning Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

- -Increase the separation between the equipment and receiver.
- -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Prohibition of Co-location

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter

Safety Information

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

Declaration of Conformity for R&TTE directive 1999/5/EC

Essential requirements - Article 3

Protection requirements for health and safety - Article 3.1a

Testing for electric safety according to , EN50392 and EN 60950-1 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b Testing for electromagnetic compatibility according to EN 301 489-1 and EN 301 489-17 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum - Article 3.2

Testing for radio test suites according to EN 300 328 has been conducted. These are considered relevant and sufficient.

CE Mark Warning

This is a Class B product, in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

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General Information

The Bonded Channel features 4 LAN ports and wireless ability.

Package Contents

The package includes one of each of the following items-

- Bonded Channel
- 12 VDC 1.5 A power adapter
- RJ-11 telephone cable
- RJ-45 Ethernet cable
- External antenna
- User Manual / Quick Guide

Important Safety Instructions

- Place your device on a flat surface close to the cables in a location with sufficient ventilation.
- To prevent overheating, do not obstruct the ventilation openings of this equipment.
- Plug this equipment into a surge protector to reduce the risk of damage from power surges and lightning strikes.
- Operate this equipment only from an electrical outlet with the correct power source as indicated on the adapter.
- Do not open the cover of this equipment. Opening the cover will void any warranties on the equipment.
- Unplug equipment first before cleaning. A damp cloth can be used to clean the equipment. Do not use liquid / aerosol cleaners or magnetic / static cleaning devices.

Front Panel View



LED	Mode	Definition
	Solid (green)	IP is connected and no traffic detected.
	No light	Modem is in bridged mode or ADSL connection
Internet	No light	not present.
	Blinking	Connected and traffic is present.
	Red	Device attempted to connect to IP and failed.
	Solid	Wireless is enabled.
AP	No light	Wireless is disabled.
	Blinking	There is wireless traffic.
	Solid	ADSL is connected, and there is no ADSL traffic.
DSL2 ACT	No light	ADSL is not connected.
	Blinking	There is ADSL traffic.
	Solid	ADSL is connected, and there is no ADSL traffic.
DSL1 ACT	No light	ADSL is not connected.
AP DSL2 ACT DSL1 ACT LAN1-LAN4	Blinking	There is ADSL traffic.
	Solid	Router is connected to the LAN.
	No light	No connection to the LAN. Check if the LAN cable
	NO IIGITI	is connected to the router.
	Blinking	LAN traffic
	Solid	Router is powered on.
Power	No light	Router is not powered. Check if the router is plugged in and if the power switch is turned on.

Back Panel View



Port	Description
Phone	RJ-11 cable connects to telephone (no external splitter necessary; unit has internal splitter).
Line	RJ-11 cable connects the ADSL line.
Reset / Default	<i>Restart</i> —press the button for less than 5 seconds. <i>Default settings</i> —press the button for 5 seconds or longer.
LAN1-LAN4	RJ-45 connects the unit to Ethernet devices such as a PC or a switch.
Power	Connects to the 12 VDC 1.5 A power adapter.
Antenna	Transmits wireless signals

Installing the Router

Connect the ADSL Line and Telephone

Connect one end of an RJ-11 cable from your ADSL connection and the other end to the LINE port of the router. Use a second RJ-11 cable to connect between a telephone and the PHONE port of the router.

Connect the PC to the Router

Use the Ethernet cable to connect your computer directly to the router. Connect one end of the Ethernet cable to one of the 4 ports labeled LAN on the rear panel of the router and connect the other end to the Ethernet port of your computer. Attach any additional PCs to the router using RJ-45 cables to the port labeled LAN on the rear panel of the router.

Connect the Power Adapter

Complete the process by connecting the AC power adapter to the POWER connector on the back of the device and plug the adapter into a wall outlet or power strip. Then turn on and boot up your PC and any LAN devices, such as hubs or switches, and any computers connected to them.

Installation Diagram



Mounting the Unit

The bonded channel unit can be mounted on the wall with the screws provided. Mounting can be done on wall material including concrete, wood, or drywall. Select an appropriate location free from obstructions or any possible interference. Make sure the cables can be easily attached to the router without strain. The illustration below shows how to mount the device horizontally on a wall.



Configuring Your Computer

Prior to accessing the router through the LAN port, note the following necessary configurations—

- Your PC's TCP/IP address: **192.168.1**.__(the last number is any number between 2 and 254)
- The router's default IP address: **192.168.1.1**
- Subnet mask: 255.255.255.0

Below are the procedures for configuring your computer. Follow the instructions for the operating system that you are using.

Windows 2000

- 1. In the Windows taskbar, click on the Start button and point to Settings, Control Panel, and Network and Dial-up Connections (in that order).
- 2. Click on Local Area Connection. When you have the Local Area Connection Status window open, click on **Properties**.
- 3. Listed in the window are the installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled, and you can skip to Step 10.
- 4. If Internet Protocol (TCP/IP) does not appear as an installed component, then click on Install.
- 5. In the Select Network Component Type window, click on protocol and then the Add button.
- 6. Select Internet Protocol (TCP/IP) from the list and then click on OK.
- 7. If prompted to restart your computer with the new settings, click OK.
- 8. After your computer restarts, click on the Network and Dial-up Connections icon again, and right click on the Local Area Connection icon and then select Properties.
- 9. In the Local Area Connection Properties dialog box, select Internet Protocol (TCP/IP) and then click on **Properties**.
- 10. In the Internet Protocol (TCP/IP) Properties dialog box, click in the radio button labeled Use the following IP address and type 192.168.1.x (where x is any number between 2 and 254) and 255.255.255.0 in the IP address field and Subnet Mask field.

11. Click on OK twice to save your changes and then close the Control Panel.

Windows XP

- 1. In the Windows taskbar, click on the Start button and point to Settings and then click Network Connections.
- 2. In the Network Connections window, right click on the Local Area Connection icon and click on properties.
- 3. Listed in the Local Area Connection window are the installed network components. Make sure the box for Internet Protocol (TCP/IP) is checked and then click on **Properties**.
- 4. In the Internet Protocol (TCP/IP) Properties dialog box, click in the radio button labeled Use the following IP address and type 192.168.1.x (where x is any number between 2 and 254) and 255.255.255.0 in the IP address field and Subnet Mask field.
- 5. Click on OK twice to save your changes and then close the Control Panel.

Log in to the Router

This section explains how to log in to your router using the following steps-

- 1. Launch your web browser.
- 2. Enter the URL http://192.168.1.1 in the address bar and click on Enter.

A login screen like the one below will be displayed after you connect to the user interface.

Enter Netv	vork Passwor	d	<u>? ×</u>				
? >	Please type yo	ur user name and password.					
খ	Site:	192.168.1.1					
	Realm	ADSL Router					
	User Name						
	Password						
	Site: 192.168.1.1 Realm ADSL Router User Name Password Save this password in your password list OK Cance						
		OK Can	cel				

3. Enter your user name and password, and then click on OK to display the user interface.

⚠️ NOTE: There are two default user name and password combinations—

Username	Password	Access to (in interface)
admin	admin	All sections
user	user	All sections except Advanced and Wireless

The admin / admin combination can perform all functions. The user / user name and password combination can display device status, but cannot change or save configurations. Passwords can be changed at any time.

Device Info

This section describes the system information that can be accessed using the menu items under Device Info. In addition to general device information, the following items can also be seen—WAN, Statistics, Route, ARP and DHCP.

Summary

To access information on the device and connection status, click on *Summary* under *Device Info*. It shows the following information about the CPE—

- Board ID
- Software Version
- Bootloader (CFE) Version
- Wireless Driver Version
- MAC Address
- Upstream / Downstream Line Rate (in Kbps)
- LAN IP Address
- Default Gateway
- Primary DNS Server IP Address
- Secondary DNS Server IP Address



Welcome Device Info WAN WAN Construction ARP DHCP Cuick Setup Advanced Setup Wireless Diagnostics Management

Device Info

Paradyne Firmware:	00.00.05
Product Name:	6228-I2-xxx
Serial Number:	N/A
Hardware Version:	N/A
Board ID:	58BD
Software Version:	3-08-01-0200.A2pB022c.d19g
Bootloader (CFE) Version:	1.0.37-8.7
Wireless Driver Version:	3.131.35.6.cpe2.0
MAC Address:	00:E0:18:00:00:01

This information reflects the current status of your DSL connection.

Line Rate - Upstream (Kbps):	800
Line Rate - Downstream (Kbps):	7616
LAN IP Address:	192.168.1.1
Default Gateway:	
Primary DNS Server:	192.168.1.1
Secondary DNS Server:	192.168.1.1

WAN

To access WAN Information click on the *WAN* item located under *Device Info*. The following information about each WAN connection is provided—

- VPI/VCI
- Connection ID
- Category
- Service Name
- Interface Name
- Protocol
- IGMP (Internet Group Management Protocol)
- QoS (Quality of Service)
- State
- Status
- IP Address

Note that this screen will be like the one below before a WAN connection is set up.

PARADY	NE° GPE										
Welcome Device Info Summary VAN Constraints Constr	WAN Info VPI/VCI	Con. ID	Category	Service Name	Interface Name	Protocol	IGMP	QoS	State	Status	IP Address

The following screen shows a WAN connection that has been created.



STATISTICS

LAN Statistics

To access LAN statistics click on the *LAN* item under *Statistics*. Information is given for each interface (Ethernet Bonding, Ethernet (Port 1-4) and Wireless). For both received and transmitted data, the following information is provided—

- Bytes
- Packets
- Errors
- Drops

To renew the data, click on the Reset Statistics button below the table.

PARADY	NE° CPE										
Uelcome	Statistics LAN										
Summary	Interface	Received				Transmitted					
		Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops		
	Ethernet Bonding	497180	7765	0	0	1517392	8913	0	0		
ATM	Ethernet LAN1(1-4)	657220	5148	0	0	1814521	5151	0	0		
ADSL	Wireless	7121	44	0	0	21247	181	186	0		
Advanced Setup Original Setup Advanced Setup Diagnostics Diagnostics Advangement	Reset Statistics	- 				,		,			

WAN Statistics

To access WAN statistics click on the *WAN* item under *Statistics*. WAN statistics, like the LAN statistics are listed by each connection with received and transmitted data packet information.

PARADY	NE° GPE											
Uelcome	WAN Sta	tistics		0								
Summary	Service	VPI/VC	I Protoco	Interface		Rece	eived		Transmitted			
					Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
	br_0_3 5	0/35	Bridge	nas_0_ 35	0	0	0	0	23665	200	0	0
ATM ADSL ARP DHCP Quick Setup Wireless Diagnostics Management	Reset	Statistic	S									

ATM Statistics

To access ATM statistics click on the *ATM* item under *Statistics*. ATM statistics are organized into three areas— ATM Interface Statistics, AAL5 Interface Statistics, and AAL5 VCC Statistics. To view renewed values, click on the **Reset Statistics** button.

PARADY	NE°												
ADSL	PE												
Welcome Device Info Summary WAN Statistics LAN WAN						Statisti ATM Interf	ics ATM ace Statisti	cs					
	In Octets	Out Octets	In Errors	In Unknown	In Hec Errors	In Invalid Vpi Vci Errors	In Port Not Enable Errors	In PTI Errors	In Idle Cells	In Circuit Type Errors	In OAM RM CRC Errors	In GFC Errors	
	0	0	0	0	0	0	0	0	0	0	0	0	
Route		AAL5 Interface Statistics											
	In	0 Octets	Out Oc	tets In Uca	ast Pkts	Out Ucast I	Pkts In Erro	rs Out Ei	rorsI	n Discards	Out Discai	rds	
Quick Setup		0	0		0	0	0	0	8	0	0		
Advanced Setup Wireless						AAL5 VC	C Statistics						
⊞ • Call Management		VPI/ 0/3	VCI CR 35 214	C Errors S. 7988600	AR Timeo	outs Oversi	2ed SDUs Sh	ort Pac	ket Er	rorsLengt	0 Errors		
						Reset	Statistics						

ADSL Statistics

To view ADSL statistics click on the *ADSL* item under *Statistics*. Information contained in this screen is useful for troubleshooting and diagnostics of connection problems. Click on the **Reset Statistics** button to view renewed values.

ADSL (CPE	_		
Welcome	Statistics ADSL			
Summary	Mode:		G.DMT	
	Type:		Interleave	
	Line Coding:		Trellis Off	
	Status:			
ATM	Link Power State:		LO	
- ADSL				
- ARP		Downstr	eamUpstream	
DHCP	SNR Margin (dB):	0.0	0.0	
Quick Setup	Attenuation (dB):	0.0	0.0	
	Output Power (dBm):	13.0	0.0	
Diagnostics	Attainable Rate (Kbps):	0	0	
± · 🗀 Management	Rate (Kbps):	7616	800	
	K (number of bytes in DMT frame):	0	0	
	R (number of check bytes in RS code wo	ord):0	0	
	S (RS code word size in DMT frame):	0	0	
	D (interleaver depth):	0	0	
	Delay (msec):	0	0	
	Cuper Frances	0		
	Super Frames:	U		
	Super Frame Errors:	0	0	
	RS Words: RS Connectable Ennorm	0	0	
	RS Correctable Errors:	0	0	
	KS UICOTTeccable Errors.	V	19/6	
	HEC Errors:	0	0	
	OCD Errors:	0	0	
	LCD Errors:	0	0	
	Total Cells:	0	0	
	Data Cells:	0	0	
	Bit Errors:	0	0	
	Total ES:	0	0	
	Total SES:	0	0	
	Total UAS:	2608	0	
	ADSL BER Test Reset Statistics			

ADSL BER Test

A **Bit Error Rate Test (BER Test)** is a test that reflects the ratio of error bits to the total number transmitted.

If you click on the ADSL BER Test button at the bottom of the ADSL Statistics page, the following pop-up screen will appear allowing you to set the tested time and to begin the test.



Below is an ADSL BER Test result screen displaying information about the test including the error bits and ratio.

http://192.168.1.1/berstop.tst - M	icrosoft Intern	et Explo 💶 🗙
ADSL BER Test - Result		
The ADSL BER test complete	d successfully.	
Test Time (sec):	20	
Total Transferred Bits:	0	
Total Error Bits:	268478476	
Error Ratio:	3.74e-01	
Close		Y

Route

To access the routing information, click on the *Route* item under *Device Info*. The following are the routing information provided—

- Destination
- Gateway
- Subnet Mask
- Flag
- Metric
- Service
- Interface

PARADYN Adsl gf	 } E						
Welcome Device Info Summary WAN Statistics LAM	Device Info - Flags: U - up, D - dynamic (n	- Route I - reject, G edirect), M -	- gateway, H - h modified (redir	iost, R - ect).	reinstate	9	
	Destination	Gateway	Subnet Mask	Flags	Metric	Service	Interface
	192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0
ARP ARP Outck Setup Advanced Setup Wireless Diagnostics Management	1	1	1	1	1	1	

ARP (Address Resolution Protocol)

To access ARP status click on the *ARP* item under *Device Info*. The information provided shows the IP address that is mapped to the hardware IP address.

PARADY Adsl (NE° Pe			
🖳 Welcome 🚊 🔄 Device Info	Device Info -	- ARP		
Summary WAN Statistics LAN WAN ATM ADSL Boute DHCP Quick Setup Advanced Setup Wireless Diagnostics	IP Address	Flags	HW Address	Device
	192.168.1.4	Complete	00:07:40:FD:1C:F9	br0

DHCP (Dynamic Host Configuration Protocol)

To access the DHCP lease information click on *DHCP* under *Device Info*. Devices that have been issued IP addresses by DHCP will be listed on this screen by its hostname, MAC address and IP address along with the expiration of the IP address.

Welcome	Device Info	DHCP Leases		
Device Info	Hostname	MAC Address	IP Address	Expires In
E Catistics	Test-NB	00:13:02:13:61:EF	192.168.1.2	23 hours, 35 minutes, 53 seconds
ARP DHCP Quick Setup Advanced Setup Wireless Diagnostics Management				

Quick Setup

This section will explain how to quickly configure the router for the main purpose of connecting to the Internet. If you need to configure any advanced functions, then those can be performed in the advanced section.

ATM PVC Configuration

To enable the auto-connect process, click on the box labeled DSL Autoconnect, a process that will automatically detect the first usable PVC and automatically detect PPPoE, PPPoA, and Bridge Protocol (with DHCP Server available). To continue, click on the **Next** button.

Note: The following example will be a PPPoA example where the VPI / VCI numbers have not been used. Note that the same numbers can be used only once.

PARADY	NE° GPE
Welcome	Quick Setup
	This Quick Setup will guide you through the steps necessary to configure your DSL Router.
	ATM PVC Configuration
	Select the check box below to enable DSL Auto-connect process.
Quick Setup Advanced Setup	DSL Auto-connect
Wireless Diagnostics	
⊕ 🗋 Management	
	Next

VPI and VCI numbers can be entered manually if you do not want to use DSL Auto-connect. Quality of service can also be enabled on this screen.

PARADYNE	
ADSL CP	
Welcome Device Info Summary WAN Statistics LAN DADSL ARP Quick Setup Quick Setup DHCP Quick Setup Management	Quick Setup This Quick Setup will guide you through the steps necessary to configure your DSL Router. ATM PVC Configuration Select the check box below to enable DSL Auto-connect process. DSL Auto-connect The Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) are needed for setting up the ATM PVC. Do not change VPI and VCI numbers unless your ISP instructs you otherwise. YP: [0-255] 0 Ct: [2-2553] 35 Dable Quality Of Service Thabling QoS for a PVC Improves performance for selected classes of applications. However, since QoS also consumes system resources, the number of PVCs will be reduced consequently. Use Advanced Setup/Quality of Service to assign priorities for the applications. Inable Quality Of Service

Additionally, if you do not use DSL Auto-connect, then you will need to select the connection type and encapsulation mode from a list as shown below.

PARADYN	ΙE [®]
ADSL CI	
Welcome	Connection Type
Quick Setup	Select the type of network protocol for IP over Ethernet as WAN interface
	PPP over ATM (PPPoA)
Firewall Quality of Service	O PPP over Ethernet (PPPoE)
DNS	MAC Encapsulation Routing (MER)
Port Mapping Wireless Diagnostics	C IP over ATM (IPoA)
⊞ • ☐ Management	C Bridging
	Encapsulation Mode
	VC/MUX
	Back Next

The next screen to appear will depend on the connection type that was selected in the previous screen.

PARADYN	
ADSL C	
Welcome	PPP Username and Password
Ourick Setup Advanced Setup WAN LAN	PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.
Firewall Quality of Service	PPP I learname
Routing DNS	PPP Password:
ADSL	Authentication Method: AUTO
Diagnostics Management	
	Dial on demand (with idle timeout timer)
	PPP IP extension
	C Keep Alive
	Use Static IP Address
	C Obtain default gateway automatically.
	C Use the following default gateway:
	Use IP Address:
	Ø Use WAN Interface: pppoa_0_35_1/ppp_0_35_1 ▼
	Back Next

In the next screen, decide whether or not NAT, firewall, IGMP multicast, and WAN service should be enabled.

PARADY	NE [®]
ADSL	CPE
Welcome	Network Address Translation Settings
Quick Setup Advanced Setup	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).
Diagnostics Management	Enable NAT
	Enable Firewall 🗹
	Enable IGMP Multicast, and WAN Service
	Enable IGMP Multicast
	Enable WAN Service
	Service Name: pppoa_0_35_1
	Back Next

The following is the Device Setup screen where you enter the IP address / subnet mask as well as enable or disable DHCP server. If you have a second IP address and subnet mask for the LAN interface, click on the checkbox.

PARADY	NE° GRE
Welcome Quick Setup Advanced Setup Juick Setup Juick Setup Mireless Management	Device Setup Configure the DSL Router IP Address and Subnet Mask for LAN interface. IP Address: 192.168.1.1 Subnet Mask: 255.255.255.0 C Disable DHCP Server Imable DHCP Server Start IP Address: Start IP Address: 192.168.1.2 End IP Address: 192.168.1.254 Leased Time (hour): 24
Configure the second IP Addres IP Address: Subnet Mask:	Configure the second IP Address and Subnet Mask for LAN interface

The last screen under the Quick Start section allows you to set up the wireless feature on the router.

PARADY	NE° GPE
Welcome	Wireless Setup
Device Info Quick Setup Advanced Setup	Enable Wireless 🔽
 ➡ Wireless ➡ Diagnostics ➡ ▲ Management 	Enter the wireless network name (also known as SSID). SSID: Wireless
	Back Next

When you click on Next, the summary screen shows the settings made under WAN setup.

PARADYN			
ADSL CP			
Welcome Device Info Quick Setup Advanced Setup	WAN Setup - Summ Make sure that the set	ary ttings below match the se	ettings provided by your ISP.
Diagnostics	VPI / VCI:	0 / 35	1
🗄 🗀 Management	Connection Type:	PPPoA	
	Service Name:	pppoa_0_35_1	
	Service Category:	UBR	
	IP Address:	Automatically Assigned	
	Service State:	Enabled	
	NAT:	Enabled	
	Firewall:	Enabled	
	IGMP Multicast:	Disabled	
	Quality Of Service:	Disabled	
	Click "Save/Reboot" to	e save these settings and on process takes about 1	reboot router. Click "Back" to make any modifications. minute to complete and your DSL Router will reboot. Back Save/Reboot

Advanced Setup

This section of the user manual explains the advanced configurations of the CPE. The topics under Advanced Setup are *WAN, LAN, NAT, security, routing, DNS,* and *DSL.*

WAN

Configure the WAN settings according to the instructions given by your ISP. Each existing WAN connection will be listed in the table with the options to edit or remove them as well as to add new WAN connections. Remember to click on the **Save / Reboot** button after any changes made.

PARADYNE	*											
ADSL CP	-											
₩ Welcome ⊕ Device Info - Quick Setup - Advanced Setup	WAN Setu Choose Ad Choose Fin	ip d, Edit, or ish to app	Remove to bly the chang	configure 1 les and rel	WAN interfac	es. em.						
Clan NAT Class Clas	VPI/VCI	Con. ID	Category	Service	Interface Ad	d Finish	IGMP	QoS	State	Remove	Edit	Action

Click on the **Add** button if you want to add a new rule for the WAN interface. The ATM PVC Configuration screen appears.

PARADYN	
ADSL C	
Welcome Device Info Device Info Advanced Setup Advanced Setup LAN DAT	ATM PVC Configuration This screen allows you to configure an ATM PVC identifier (VPI and VCI) and select a service category. Choose an existing interface by selecting the checkbox to enable it. VPI: [0-255] 0 VCI: [32-65535] 35 Service Category: UBR Without PCR V Enable Quality Of Service
⊞- Management	Enabling packet level QoS for a PVC improves performance for selected classes of applications. QoS cannot be set for CBR and Realtime VBR. QoS consumes system resources; therefore the number of PVCs will be reduced. Use Advanced Setup/Quality of Service to assign priorities for the applications.
	Back Next

The ATM PVC Configuration screen allows you to configure an ATM PVC identifier (VPI and VCI) and select a service category. Verify the following values with your ISP before you change them.

- VPI: Virtual Path Identifier. The valid range is 0 to 255.
- VCI: Virtual Channel Identifier. The valid range is 32 to 65535.
- Service Category: Five classes of traffic are listed
 - o UBR Without PCR
 - o UBR With PCR
 - o CBR
 - o Non Realtime VBR
 - o Realtime VBR

Enabling QoS for a PVC improves performance for selected classes of applications. However, since QoS also consumes system resources, the number of PVCs is reduced. If you want to enable QoS service, click on the **Enable Quality Of Service** check box.

Connection Type

This screen shows the below types of network protocols and encapsulation modes—

- PPP over ATM (PPPoA)
- PPP over Ethernet (PPPoE)
- MAC Encapsulation Routing (MER)
- IP over ATM (IpoA)
- Bridging

Select the mode that your ISP has instructed you to use and click on Next.

Also available is the option to enable 802.1q, a standard to allow multiple bridged networks to transparently share the same physical network link without leakage of information between networks (i.e. "trunking"). Click on the checkbox if you wish to enable this function.

PARADYN	JE°
ADSL G	
Uvelcome	Connection Type
Quick Setup	Select the type of network protocol for IP over Ethernet as WAN interface
IAN IAN IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	PPP over ATM (PPPoA)
Firewall Quality of Service	C PPP over Ethernet (PPPoE)
DNS	MAC Encapsulation Routing (MER)
Port Mapping Wireless Diagnostics	O IP over ATM (IPoA)
⊞-⊡ Management	C Bridging
	Encapsulation Mode
	VC/MUX
	Back Next

If you selected a PPP connection, then the next screen shows the PPP Username and Password section. The PPP username and password will have already been entered. For this example, the PPPoA Service Name "Test" has been chosen.

Select an **authentication method** from the following choices— auto, PAP, CHAP, and MSCHAP.

Dial on demand: If you select this box, then an additional **Inactivity Timeout** box will appear for you to enter the time in minutes.

PPP IP extension is a special feature deployed by some service providers. Do not select this item unless specifically required by your service provider.

Click on the Next button when you finish to continue.

PARADYN	
ADSL C	rs
Welcome Advanced Setup Adva	PPP Username and Password PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you. PPP Username: PPP Password: Authentication Method: AUTO
Diagnostics Management	Dial on demand (with idle timeout timer)
	PPP IP extension Keep Alive
	 Obtain default gateway automatically. Obtain default gateway automatically. Use the following default gateway: Use IP Address: Use WAN Interface: pppoa_0_35_1ppp_0_35_1
	Back Next

The next screen allows you to configure NAT settings as well as enable IGMP multicast and WAN service.

PARADYN	
ADSL CI	
Welcome	Network Address Translation Settings
Quick Setup Advanced Setup WAN WAN	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).
	Enable NAT
B C Quality of Service	Enable Firewall 🗹
ADSL Port Mapping	Enable IGMP Multicast, and WAN Service
	Enable IGMP Multicast 🔲
ten Management	Enable WAN Service 🔽
	Service Name: pppoa_0_35_1
	Back Next

Bridge Example:

To set up a bridge connection, from the following Connection Type Screen, select bridging as the connection type and select the preferred encapsulation mode and then click on Next.

PARADYN Adsl g	NE° Pe
Welcome	Connection Type
☐ Quick Setup □ ↔ Advanced Setup	Select the type of network protocol for IP over Ethernet as WAN interface
	O PPP over ATM (PPPoA)
Firewall Quality of Service	C PPP over Ethernet (PPPoE)
	MAC Encapsulation Routing (MER)
Port Mapping	O IP over ATM (IPoA)
⊞ - <mark>⊡</mark> Management	Bridging
	Encapsulation Mode
	Back Next

The next screen will be to select whether or not to enable bridge service and to enter the service name. To finish the bridge connection setup, click on **Next** and the summary of the connection will be displayed.

PARADYNE	-		
ADSL CPE			
Welcome Quick Setup Advanced Setup LAN CAN Quality of Service Routing Port Mapping Wireless Management	Unselect the check b Enable Bridge Service: Service Name:	ox below to disable th ₪ pppoa_0_35_1	is WAN service Back Next

When the settings are complete, the next screen shows a **WAN Setup** - **Summary** screen displaying the WAN configurations made. Below is the bridge connection WAN Setup Summary page. Click on the **Save** button when the settings are correct.

PARADYNE	-		
ADOL OF			
Use Welcome ⊕ Device Info → Quick Setup → Advanced Setup	WAN Setup - Summ Make sure that the set	ary ttings below matc	h the settings provided by your ISP.
WAN LAN	VPI / VCI:	0 / 35	
	Connection Type:	Bridge	
Quality of Service	Service Name:	pppoa_0_35_1	
Routing DNS DNS DNS DOSL Port Mapping Wireless	Service Category:	UBR	
	IP Address:	Not Applicable	
	Service State:	Enabled	
Diagnostics	NAT:	Disabled	
	Firewall:	Disabled	
	IGMP Multicast:	Not Applicable	
	Quality Of Service:	Disabled	
	Click "Save" to save th NOTE: You need to re	nese settings. Clicl boot to activate th	k "Back" to make any modifications. IIS WAN interface and further configure services over this interface. Back Save

The below screen will appear showing the WAN settings that you made. When satisfied with the settings, and no changes are necessary, click on the **Finish** button. To remove any settings, click on the **Remove** button.

PARADY	NE° Pe	_										
Welcome Device Info Quick Setup Advanced Setup LAN	WAN Setu Choose Ad Choose Fir	ip d, Edit, ish to i	or Remove apply the cha	to configure WA anges and reboo	N interfaces. t the system.							
	VPI/VCI	Con. ID	Category	Service	Interface	Protocol	IGMP	QoS	State	Remove	Edit	Action
Quality of Service Routing DNS	0/35	1	UBR	pppoa_0_35_1	nas_0_35	Bridge	N/A	Disabled	Enabled		Edit	
ADSL Port Mapping Diagnostics	2/38	1	UBR	pppoa_2_38_1	ppp_2_38_1	PPPoA	Disabled	Disabled	Enabled		Edit	Up

After selecting the Finish button, the below screen will appear. At this point, the router will reboot to save the changes made.

	NE° PE
Welcome Device Info Quick Setup Advanced Setup Advanced Setup LAN Firewall Cuality of Service Routing DNS DNS DNS DNS DNS Dort Mapping Mireless Diagnostics Management	DSL Router Reboot The DSL Router has been configured and is rebooting. Close the DSL Router Configuration window and wait for 60 seconds before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

LAN Local Area Network (LAN) Setup

You can configure the DSL Router IP address and Subnet Mask for the LAN interface to correspond your LAN's IP Subnet. Enter the following items—

- IP Address
- Subnet Mask
- Enable UpnP
- Disable / Enable DHCP Server
- Start / End IP Address
- Leased Time in hours
- Configure the second IP address and Subnet Mask for LAN interface

The **Save** button only saves the LAN configuration data, but does not apply the configurations. Select the **Save/Reboot** button to save the LAN configuration data and reboot the router and apply the new configurations.

PARADYNE	
ADSL CPE	
Welcome Local Area	Network (LAN) Setup e DSL Router IP Address and Subnet Mask for LAN interface. Save button only saves the LAN i data. Save/Reboot button saves the LAN configuration data and reboots the router to make the new i effective. I192.168.1.1 S255.255.255.0 UPnP IGMP Snooping I Mode UPCP Server DHCP Server DHCP Server I192.168.1.2 Address: 1192.168.1.2 Time (hour): 24 e the second IP Address and Subnet Mask for LAN interface
	Save Save/Reboot

NAT

Enable NAT (Network Address Translation) to configure the Virtual Server, Port Triggering, and DMZ Host.

Virtual Servers

A virtual server allows you to direct incoming traffic from the WAN side to a specific IP address on the LAN side. To set up a virtual server, click on the Add button.

PARADYN Adsl gf								
Welcome Device Info Quick Setup Advanced Setup Advanced Setup LAN LAN Virtual Servers Firewall Drath Contemport Routing DNS Advanced Setup ONS DNS DNS DNS DNS DNS DNS DNS DNS DNS D	NAT Vir Virtual Sen internal ser to be conve configured.	tual Servers Set ver allows you to d ver with a private rrted to a different	up irect incoming IP address on port number u	traffic from th the LAN side. sed by the se	ne WAN side (ide The internal port river on the LAN s	ntified by prot t is required or side. A maxim	ocol and external nly if the external um of 32 entries (port) to the port needs can be
	Server Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IP Address	Remove

Select the virtual server from the drop-down list and complete the server IP address, then click on the **Save / Apply** button.

PARADYNE	8					
ADSL CPI		_	_	_		
Welcome Device Info Quick Setup Avanced Setup ViAn NAT NAT NAT Dot Triggering DM2 Host Guality of Service Cuality of Service Characteris Cons Cons Cons Cons Cons Cons Cons Con	NAT Virtual S Select the service to the specified as End" normally a modified. Remaining num Server Name: © Select a Ser Server IP Addr	Servers e name, and enter erver. NOTE: The ' and will be the sa ber of entries th vice: MSN Mess rver: ess: 192.168.1.	the server IP add 'Internal Port E me as the "Int at can be confi enger	ress and click ' ind" cannot b ernal Port Sta gured:32	"Save/Apply" to forward IP (e changed. It is the samu rt" or "External Port End	ackets for this service e as "External Port " if either one is
I Diagnostics 				Save/Apply		
			-			
	External Port S	6901	TCP	6891	6901	:na
	1863	1963	TCP	1863	1963	
	1863	1863	UDP	1863	1863	- <u>1</u>
	5190	5190	UDP	- 5190	5190	
	6901	6901	UDP	6901	6901	
			TCP	-		
			TCP	-		7 mm
			TCP	-		
			TCP	•		
			TCP	-		
			TCP	-		
			TCP	-		
				Save/Apply		

The following screen appears after you save your selection. To add additional virtual servers, click on the **Add** button. If you need to remove any of the server names, select the check box and click on the **Remove** button.

PARADYN	ΙE°							
ADSL G	PE	_	_	_	_	_		
Welcome Device Info Quick Setup Quick Setup VAN LAN Nitual Servers DNZ Host	NAT Virtual Virtual Server internal server to be converte configured.	al Servers Set allows you to d r with a private ed to a different	up irect incoming 1 IP address on t port number u:	traffic from the LAN side. sed by the se	ne WAN side (id The internal po rver on the LAN Remove	lentified by proi rt is required o I side. A maxim	tocol and external Inly if the external Ium of 32 entries c	port) to the port needs an be
Green Construction	Server Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IP Address	Remove
ADSL Port Mapping	MSN Messenger	6891	6901	тср	6891	6901	192.168.1.54	
Wireless Diagnostics Management	MSN Messenger	1863	1963	тср	1863	1963	192.168.1.54	
	MSN Messenger	1863	1863	UDP	1863	1863	192.168.1.54	
	MSN Messenger	5190	5190	UDP	5190	5190	192.168.1.54	
	MSN Messenger	6901	6901	UDP	6901	6901	192.168.1.54	

Port Triggering

Click on the Add button to add Port Triggering to your Internet application.



The below screen appears when you click on Add allowing you to select the application that you want to set the port settings for. After a selection has been made, click on the Save / Apply button.

	E°					
Welcome Device Info Quick Setup Advanced Setup CAVanced Setup LAN DAT DIAT DIAT DIAT DIAT DIAT DIAT DIAT	NAT Port 1 Some applicat ports in the Rc screen by sele Remaining nu Application Na © Select a © Custom	Friggering ions such as games suter's firewall be o cting an existing ap umber of entries I me: n application: application:	, video conferencin; pened for access by lication or creating that can be config ckTime 4 Client	g, remote access the applications your own (Cust gured:32	applications and o You can configure orm application)and	thers require that specific the port settings from this click "Save/Apply" to add it.
	Trigger Port	Start Trigger Por	t End Trigger Prot	ocol Open Port	Start Open Port	End Open Protocol
H Management	554	554	TCP	6970	7000	
			TCP			TCP
			TCP	ī í —		TCP
	í T		TCP			TCP
			TCP			TCP
			TCP	•		TCP
			TCP	•		TCP
				Save/Apply		

The below screen appears after you save your selections. You will be able to add or remove selections made, by clicking on the Add and Remove buttons.

PARADYN	*									
Welcome Device Info Quick Setup Advanced Setup Advanced Setup Virtual Servers Port Triggering DMX Host DMX Host DMX Host	NAT Port Trig Some applications Trigger dynamical connection to a re establish new con be configured.	gering Setup require that spec ly opens up the 'O mote party using t nections back to th	ific ports in pen Ports' i dhe 'Trigger he applicatio	the Rou n the fir ing Port: on on the Add	ter's fi ewall v s'. The e LAN : Rer	rewall be o when an ap Router allo side using ti move	pened f plicatior wys the he 'Ope	or acces i on the remote n Ports'.	s by the rei LAN initiate party from A maximul	mote parties. Port is a TCP/UDP the WAN side to m of 32 entries can
E C Routing		Application	Ti	igger			Open		Remove	
ADSL		Name	Protocol	Port R	lange	Protocol	Port	Range		
Port Mapping Wireless				Start	End		Start	End		
Diagnostics Management		QuickTime 4 Cli	ТСР	554	554	UDP	6970	32000		
		QuickTime 4 Cli	TCP	554	554	TCP/UDP	6970	7000		

DMZ Host

You can define the IP address of the DMZ Host on this screen. Enter the IP address and click on Save / Apply.

PARADY	NE°
ADSL C	
Welcome	NAT DMZ Host
☐ Quick Setup ☐ Advanced Setup ☐ → WAN	The DSL router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.
	Enter the computer's IP address and click "Apply" to activate the DMZ host.
Port Triggering DMZ Host	Clear the IP address field and click "Apply" to deactivate the DMZ host.
Guality of Service Auting Coulity of Service DNS DNS DNS Port Mapping Wireless Diagnostics Diagnostics	DMZ Host IP Address: Save/Apply

Firewall

IP Filtering—Outgoing

The outgoing filter will block the LAN traffic from entering the WAN side. Click on the **Add** button to create filters.

PARADYNE	*						
ADSL CP	5						
Welcome Device Info Device Info Cutck Setup Advanced Setup LAN LAN DIAT DIAT DIAT DIAT DIAT DIAT DIAT DIAT	Outgoing By default, Name	IP Filterin all outgoin Protocol	g Setup g IP traffic from LAN is allow Source Address / Mask	ed, but some IF Source Port Add	⁹ traffic can be BLOCKED Dest. Address / Mask	by setting up f	Remove

The below screen will appear when you click on Add. Input the filter name, source information (from the LAN side), and destination information (from the WAN side). Then click on Save / Apply.

PARADYN		
ADSL CP		
Welcome	Add IP Filter Outgoing	
Quick Setup Advanced Setup WAN LAN	The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at leas one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the filter.	t
⊕ ONAT ⊖ Construction Prime P	Filter Name:	
- Outgoing	Protocol:	
MAC Filtering	Source IP address:	
Quality of Service	Source Subnet Mask:	
Routing DNS	Source Port (port or port:port):	
ADSL	Destination IP address:	
Port Mapping	Destination Subnet Mask:	
☐ Diagnostics ⊕ ☐ Management	Destination Port (port or port:port):	
	Save/Apply	

IP Filtering–Incoming

Incoming filter filters the WAN traffic to the LAN side. Click on the Add button to add incoming filter settings.

PARADYNE	*							
ADSL CPI					_			
Welcome	Incomi	ng IP Filte	ring Setup)	land the first		TD has (fin an	
Advanced Setup	ACCEPT	TED by sett	ing up filter	s.	when the fire	vali is enabled, but some	e ip tranic ca	n be
AAN A	Name	VPI/VCI	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	Remove
					Add			

Enter a filter name, information about the source address (from the WAN side), and information about the destination address (to the LAN side). Select the protocol and WAN interface, and then click on **Save/Apply** to add the setting.

PARADYN	
ADSL CP	
Welcome	Add IP Filter Incoming
Quick Setup	The screen allows you to create a filter rule to identify incoming IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click
	'Save/Apply' to save and activate the filter.
Firewall Guttering Outroing	Filter Name:
	Protocol:
MAC Filtering	Source IP address:
Quality of Service	Source Subnet Mask:
E DNS	Source Port (port or port:port):
ADSL	Destination IP address:
	Destination Subnet Mask:
Diagnostics Management	Destination Port (port or port:port):
	WAN Interfaces (Configured in Routing mode and with firewall enabled only) Select at least one or multiple WAN interfaces displayed below to apply this rule.
	☑ Select All
	Save/Apply

MAC Filtering

MAC filtering can forward or block traffic by MAC address. You can change the policy or add settings to the MAC filtering table using the MAC Filtering Setup screen.



If you click on **Change Policy**, a confirmation dialog allows you to verify your change.

PARADYN	
ADSL CI	
Welcome Cuick Setup Cuick Set	Change MAC Filtering Global Policy WARNING: Changing from one global policy to another will cause all defined rules to be REMOVED AUTOMATICALLY! You will need to create new rules for the new policy. Are you sure you want to change MAC Filtering Global Policy from FORWARDED to BLOCKED ? NO YES

If you want to add a setting to the MAC filtering table, enter the Source and Destination MAC address, and select protocol type, frame direction, and WAN interface. Then click on **Save / Apply** to save it.

PARADYN	
ADSL CI	
Welcome	Add MAC Filter
Quick Setup	Create a filter to identify the MAC layer frames by specifying at least one condition below. If multiple conditions are specified, all of them take effect. Click "Apply" to save and activate the filter.
	Protocol Type:
Firewall IP Filtering MAC Filtering	Destination MAC Address:
Parental Control	Source MAC Address:
Routing DNS	Frame Direction:
Dert Mapping	WAN Interfaces (Configured in Bridge mode only)
Wireless Diagnostics	🔽 Select All
🗈 🦳 Management	☑ pppoa_0_35_1/nas_0_35
	Save/Apply

After you save the settings, a screen showing the settings will appear. On this screen you will be able to view and delete MAC filtering rules.

Parental Control

In a home setting, parents can also restrict the day of the week certain computers can access the router. Click on **Add** to set up the restrictions.



After you click on Add, you will see the below screen. You will be able to enter the MAC address of the PC that you wish to place on a time of day restriction. Click on Save / Apply to save the settings and to continue.

PARADYN	
ADSL CP	
Uelcome ⊕ Device Info	Time of Day Restriction
Ouick Setup Advanced Setup Advanced Setup WAN LAN NAT Firewall Firewall P Filtering Advanced Control Advanced Setup Advanced Setup NAT P Arental Control Data Setup DNS ADSL DNS DASL Diagnostics Management	This page adds a time of day restriction to a special LAN device connected to the router. The "Browser's MAC Address" automatically displays the MAC address of the LAN device where the browser is running. To restrict another LAN device, click the "Other MAC Address" button and enter the MAC address of the other LAN device. To find out the MAC address of a Windows-based PC, open a command prompt window and type "ipconfig /all".
	User Name
	Browser's MAC Address O0:07:40:FD:1C:F9 Other MAC Address (xocococcoccocco)
	Days of the week MonTue Wed ThuFri Sat Sun Click to select I I I
	Start Blocking Time (hh:mm) End Blocking Time (hh:mm)
	Save/Apply

Quality of Service

This QoS screen allows you to enable QoS and configure outgoing IP packet traffic management using DSCP (Differentiated Services Code Point) marks. Any outgoing packets without any classification rules will be marked with the DSCP mark that is selected.

PARADYNE		
ADSL CP	E	No Change(-1)
	-	default(000000)
		AF13(001110)
Welcome	QoS Queue Management Configuration	AF12(001100)
		AF11(001010)
Advanced Setup	If Enable QoS checkbox is selected, choose a default DSCP mark to automatically mark incording traffic without reference to a particular classifier. Click 'Save/Apply' button to save it	CS1(001000)
WAN	reference to a particular classifier. Circk SaveyAppry bacon to save in	AF23(010110) AF22(010100)
		AF22(010100) AF21(010010)
🗄 🚞 Firewall	Note: If Enable One checkbay is not calected all One will be disable, for all interfaces	CS2(010000)
	note: If enable dos checkbox is not selected, all dos will be disabler for all interfaces.	AF33(011110)
QoS Classification	Note: The default DSCP mark is used to mark all egress packets that do not match any classifica	AF32(011100)
⊕-	rules.	AF31(011010)
ADSL		CS3(011000)
Port Mapping Wireless	Enable QoS	AF43(100110)
Diagnostics		AF42(100100)
⊞- <mark>C</mark> Management	Select Default DSCP Mark No Change/1)	AF41(100010)
		CS4(100000)
		EF(101110)
	Save/Apply	CS5(101000)
		CS6(110000)
		CS7(111000)