

# LKW300-21A3

# **User Manual**

V1.0



# Contents

1	Introd	uction		1
	1.1	Packi	ng List	1
	1.2	Safety	/ Precautions	1
	1.3	LEDs	and Interfaces	2
	1.4	Syste	m Requirements	4
	1.5	Featu	res	5
2	Hardy	vare Inst	tallation	7
3	About	t the We	b Configuration	10
	3.1	Acces	s the Router	10
	3.2	Wizar	d	11
	3.3		3	25
		3.3.1	System	
		3.3.2	LAN	
		3.3.3	WLAN	
		3.3.4	WAN	
		3.3.5	Port Mapping	
		3.3.6	Statistics	
		3.3.7	ARP	
	3.4		ork	
		3.4.1	LAN	
		3.4.2	WAN	
		3.4.3	WLAN	
	3.5			
		3.5.1	DNS	
		3.5.2	Firewall	
		3.5.3	UPnP	
		3.5.4	IGMP Proxy	
		3.5.5	TR-069	
		3.5.6	ACL	
	3.6			
		3.6.1	Routing	
		3.6.2	NAT	
		3.6.3	Port Mapping	83



	3.6.4	IP QoS	. 84
	3.6.5	SNMP	. 86
	3.6.6	Others	. 88
3.7	Admir	۱	. 89
	3.7.1	Commit/Reboot	. 89
	3.7.2	Update	. 90
	3.7.3	System Log	. 92
	3.7.4	Password	. 92
	3.7.5	Time	.93
	3.7.6	Logout	. 94
3.8	Diagn	ostic	.95
	3.8.1	Ping Diagnosis	.95
	3.8.2	Traceroute Diagnosis	. 96
	3.8.3	OAM Loopback	. 97
	3.8.4	ADSL Statistics	.97
	3.8.5	Diag-Test	. 98

# 1 Introduction

The LKW300-21A3 is an ADSL access device that supports multiple line modes. The device provides high-speed ADSL broadband connection to the Internet or Intranet for high-end users, such as net cafes and office users. The device provides high performance access to the Internet, downlink up to 24 Mbps and uplink up to 1 Mbps. The device supports WLAN access. It can connect to the Internet through a WLAN AP or WLAN device. It complies with IEEE 802.11, 802.11b/g/n specifications, WEP, WPA, and WPA2 security specifications.

# 1.1 Packing List

- Wireless router x1
- Power adapter (DC) x1
- ADSL splitter x 1
- Quick installation guide x1
- RJ45 Cable x1
- RJ11 Cable x1
- CD (user manual) x1
- Warranty card X1

# 1.2 Safety Precautions

Follow the following instructions to prevent the device from risks and damage caused by fire or electric power:

- Use volume labels to mark the type of power.
- Use the power adapter packed within the device package.
- Pay attention to the power load of the outlet or prolonged lines. An overburden power outlet or damaged lines and plugs may cause electric shock or fire accident. Check the power cords regularly. If you find any damage, replace it at once.
- Proper space left for heat dissipation is necessary to avoid damage caused by overheating to the device. The long and thin holes on the device are



designed for heat dissipation to ensure that the device works normally. Do not cover these heat dissipation holes.

- Do not put this device close to a place where a heat source exists or high temperature occurs. Avoid the device from direct sunshine.
- Do not put this device close to a place where it is over damp or watery. Do not spill any fluid on this device.
- Do not connect this device to any PCs or electronic products, unless our customer engineer or your broadband provider instructs you to do this, because any wrong connection may cause power or fire risk.
- Do not place this device on an unstable surface or support.

# 1.3 LEDs and Interfaces

#### **Front Panel**



#### Figure 1 Front Panel

#### The following table describes the LEDs of the device.

LEDs	Color	Status	Description
Power	Green	On	The initialization of the device is successful.
		Off	The device is powered off.
ADSL		On	Connection between the device and the physical layer of the office end is established.
	Green	Blinks slowly	No signal is being detected.
		Blinks quickly	The device is handshaking with the physical layer of the office end.



LEDs	Color	Status	Description		
	Green	On	The Internet connection is normal in the routing mode (for example, PPP dial-up is successful), and no Internet data is being transmitted.		
Internet		Blinks	Internet data is being transmitted in the routing mode.		
		Off	The device is in the bridge mode.		
	Red	On	The Internet connection fails after successful synchronization in the routing mode (for example, PPP dial-up is failed).		
		On	The LAN connection is normal and activated.		
LAN 4/3/2/1	Green	Blinks	Data is being transmitted in the LAN or Internet data is being transmitted in the bridge mode.		
		Off	The LAN interface is not connected.		
		On	The WLAN connection has been activated.		
WLAN	Green	Blinks	Data is being transmitted in the WLAN.		
		Off	The WLAN connection is not activated.		
WPS	Green	Blinks	WPS is enabled, and is waiting for client to negotiate.		
		Off	WPS is disabled.		



### **Rear Panel**

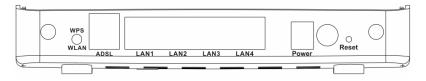


Figure 2 Rear panel

The following table describes the interfaces of the device.

Interface	Description
	Press the button and hold it for less than 1 second to enable
WPS/WI AN	WLAN.
WF S/WLAN	If WLAN is enabled, press the button for more than 3
	seconds, to initialize WPS negotiation.
ADSL	RJ-11 interface, for connecting to the ADSL interface or a
ADSL	splitter through a telephone cable.
LAN1/2/3/4	RJ-45 interface, for connecting to the Ethernet interface of a
LAN 1/2/3/4	computer or the Ethernet devices through an Ethernet cable.
Power	Power interface, for connecting to the power adapter
	This button is used to restore the factory default settings of
Reset	router. Keep the device powered on, and insert a needle into
Resei	the hole for more than 3 seconds, then release it. The device
	restores the factory default settings of router.

# 1.4 System Requirements

Recommended system requirements are as follows:

- A 10/100 base-T Ethernet card is installed on your PC
- A hub or Switch. (connected to several PCs through one of Ethernet interfaces on the device)



- Operating system: Windows 98SE, Windows 2000, Windows ME, Windows XP
- Internet Explorer V5.0 or higher, Netscape V4.0 or higher, or Firefox 1.5 or higher

# 1.5 Features

The device supports the following features:

- Various line modes
- External PPPoE dial-up access
- Internal PPPoE/PPPoA dial-up access
- 1483Briged/1483Routed/MER/IPoA access
- Multiple PVCs (up to eight) and these PVCs can be isolated from each other
- A single PVC with multiple sessions
- Multiple PVCs with multiple sessions
- 802.1Q and 802.1P protocol
- DHCP server
- NAPT
- Static route
- Firmware upgrading through Web, TFTP, or FTP
- Resetting to the factory defaults through Reset button or Web
- DNS
- Virtual server
- DMZ
- Two-level passwords and usernames
- Web interface
- Telnet CLI
- System status display
- PPP session PAP/CHAP
- IP filter
- IP quality of service (QoS)
- Remote access control
- Line connection status test
- Remote managing through Telnet or HTTP
- Backup and restoration of configuration file

- Ethernet interface supporting crossover detection, auto-correction, and polarity correction
- Universal plug and play (UPnP)

# 2 Hardware Installation

To connect the device, do as follows:

Step 1 Connect the ADSL interface of the device and the Modem interface of the splitter through a telephone cable. Connect the phone to the Phone interface of the splitter through a cable. Connect the incoming line to the Line interface of the splitter.

The splitter has three interfaces:

- Line: Connect to a wall phone jack (RJ-11 jack).
- Modem: Connect to the ADSL jack of the device.
- **Phone**: Connect to a telephone set.

Step 2 Connect the LAN interface of the device to the network card of the PC

through an Ethernet cable (MDI/MDIX).

# I Note:

Use the twisted-pair cables to connect with the hub or switch.

Step 3 Plug one end of the power adapter to the wall outlet and connect the other end to the **Power** interface of the device.

#### **Connection 1**

Figure 3 shows the application diagram for the connection of the router, PC, splitter and the telephone sets, when no telephone set is placed before the splitter.

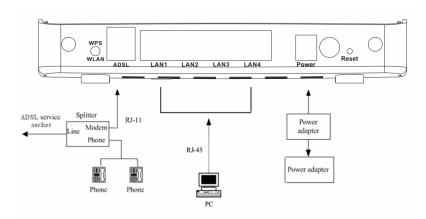


Figure 3 Connection diagram (Without connecting telephone sets before the splitter)

### **Connection 2**

Figure 4 shows the connection when the splitter is installed close to the router.

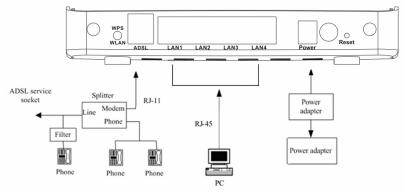


Figure 4 Connection diagram (Connecting a telephone set before the splitter)

#### Note:

When connection 2 is used, the filter must be installed close to the telephone cable. See Figure 4. Do not use the splitter to replace the filter.



Installing a telephone directly before the splitter may lead to failure of connection between the device and the central office, or failure of Internet access, or slow connection speed. If you really need to add a telephone set before the splitter, you must add a microfilter before a telephone set. Do not connect several telephones before the splitter or connect several telephones with the microfilter.

# 3 About the Web Configuration

This chapter describes how to configure the router by using the Web-based configuration utility.

# 3.1 Access the Router

The following is the detailed description of accessing the router for the first time.

Step 1 Open the Internet Explorer (IE) browser and enter http://192.168.1.1.

**Step 2** In the **Login** page that is displayed, enter the username and password.

LWK
User Name: admin
Password:
Login Reset

Figure 5 Login window

## D Note:

The username and password of the super user are **admin** and **admin**.

The username and password of the common user are user and user.

If you log in as a super user, you can check, configure and modify all the settings.

If you log in as a common user, you can check the status of the router, but can not configure the most of the settings.



In the Web configuration page, you can click **Apply Changes** to save the settings temporarily. If you want to save the settings of this page permanently, click **save** of **Attention** that appears on the left pane of the Web page after the configuration.

### 3.2 Wizard

When subscribing to a broadband service, you should be aware of the method by which you are connected to the Internet. Your physical WAN device can be either PPP, ADSL, or both. The technical information about the properties of your Internet connection is provided by your Internet Service Provider (ISP). For example, your ISP should inform you whether you are connected to the Internet using a static or dynamic IP address, and the protocol that you use to communicate on the Internet.

The **Wizard** page guides fast and accurate configuration of the Internet connection and other important parameters. The following sections describe these various configuration parameters. Whether you configure these parameters or use the default ones, click **Next** to enable your Internet connection. In the navigation bar, choose **Wizard**. The page shown in the following figure appears.

Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagn
	Wizard						
Wizard	Wizard						
	The Wizard page of After finishing the taccess. Step 1: Web Acco		e device step by step. e online and free to enjoy hi	gh-speed Internet			
	Step 2: Time Zone	Setup					
	Step 3: WAN Inter Step 4: WLAN Inte						
	Step 5: Configurati						
	Step 1: Web A	ccount Setup					
	Set a new account	for accessing the Web s	erver of the device.				
	User Name:	adain	-				

#### Figure 6 Web account setup

Enter the correct password and then click **Next**. The page shown in the following figure appears. In this page, you can set the system time and Network Time Protocol (NTP) server.

<u></u>	NK.	Red Lin	e Wireless I	Peripheral			
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnos
	Wizard						
Wizard	Step 2: Time Z Set up the system NTP Configur State:	n time and the Network Ti ration:	me Protocol (NTP) server. ČDisable – ČEnable				
	NTP Server: Interval:	Γ	very hours				
	Time Zone: GMT time:		GMT) Gambia, Liberia, Mor nu Jan 1 0:13:12 1970	rocco, England			
			<u> &lt; E</u>	ack Next >			

Figure 7 Time zone setup

The following table describes the parameters in this page.

Field	Description					
	You can disable or enable NTP function. You have to					
State	enable it if you want to configure the parameters in this					
	page.					
NTP Server	Enter the IP address of the specified time server manually.					
	Set the interval that the router obtains the time from the					
Interval	time server. That is, the interval that the router verifies the					
	time with the server.					
Time Zone	Choose the time zone of your country.					
GMT time	Display the Greenwich mean time.					

After finishing the settings, click **Next**. The page shown in the following figure appears.



<u></u>	<u>v*</u>	Red Lin	e Wireless	Peripherals		X	
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Wizard						
Wizard	Step 3: WAN	Interface Setup					
	This page allo configuration.	ws you to configure the	ADSL settings of the devic	e. A predefined list of cou	intry and Internet service	provider (ISP) is availa	ble for easy
	(1) Select the	country.					
	(2) Select the	(2) Select the ISP.					
	Note: If the country and ISP are not available in the drop-down list, you can select Others. In this case, you need to select the protocol and connection type, manually enter the VPI and VCI. For the correct values, please contace your ISP.						l connection
	(3) Enter the	correct values.					
	(4) Click "Next	" to continue.					
			Country (Click 1	o Select) 🔽			
			ISP Others	• 36160.07			
				o Select) 💌			
		CI		o Select)			
			VPI PPPoA	9-255)			
			VCI 1483 MEE	: DHCP : Static IP 32-65535)	)		
			1483 Bri 1483 Rou	dged	Back Next		
			1465 1.00	teu			

Figure 8 WAN interface setup

The router provides 6 types of WAN connection protocols. They are **PPPOE**, **PPPOA**, **1483 MER:DHCP**, **1483 MER:Static IP**, **1483 Bridged**, and.**1483 Routed**. The following wizard settings will vary depending on the protocol you select.

#### • PPPoE/PPPoA

If you select the **PPPOE** protocol, the page shown in the following figure appears.

4	<u>w≮</u>	Red Line Wi	reless Peri	pheral	->>>	×	
Wizard	Wizard	Status N	etwork	Service	Advanced	Admin	Diagnostic
	Wizard						
Wizard	Step 3: WAN I	nterface Setup					
	This page allow configuration.	s you to configure the ADSL settin	igs of the device. A pre-	defined list of co	untry and internet service p	provider (ISP) is availa	ible for easy
	(1) Select the c	ountry.					
	(2) Select the IS	P.					
	Note: If the cou type, manually	ntry and ISP are not available in th enter the VPI and VCI. For the con	e drop-down list, you ca rect values, please cont	an select Others ace your ISP.	. In this case, you need to s	select the protocol an	d connection
	(3) Enter the co	mect values.					
	(4) Click "Next"	to continue.					
		Cou	ntry (Click to Select	) •			
			ISP Others	-			
		Proti	DCOI PPPoE	•			
			ype (Click to Select				
			VPI	(0-255)			
				(32-65535	5)		
		User Na		_			
		Passw Confirmed Passw		_			
		Continued Passw	ioru I				
					Back Next		

#### Figure 9 WAN interface setup (PPPoE)

The following table describes the parameters in this page:

Field	Description
Country	Select the country from the drop-down list of Country.
	Select the ISP according to the country from the drop-down list. If
ISP	you do not find the ISP that matches the country, you can select
	Others.
Protocol	Select PPPoE.
Connection	You can select VC-Mux or LLC.
Туре	
VPI	Virtual path between two points in an ATM network. Its valid value
VEI	range is from 0 to 255.
	The virtual channel between two points in an ATM network, ranging
VCI	from 32 to 65535 (0 to 31 is reserved for local management of ATM
	traffic).
User name	The correct user name that your ISP provides to you.
Password	The correct password that your ISP provides to you.
Confirm	Enter the password again.
Password	

After finishing the settings, click **Next**. The page shown in the following figure appears.

4	WK.	Red Line	Wireless	Peripheral	->>		
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Wizard						
Wizard Attention Coolig ir modeledicial stev (n make it effective forecar)	Set up the parame	Interface Setup ters of WLAN interface. Ce: <sup>a</sup> Enable <sup>c</sup> Disable 2.4 GBz (Bro-H) v LINK_CREATIVED1 Kone v	 	Back Next≻			

Figure 10 WLAN interface setup (PPPoE)

#### The following table describes the parameters in this page.

Field	Description
WLAN Interface	You can choose <b>Enable</b> or <b>Disable</b> . By default, WAN interface is enabled. You need to enable WAN interface, and then you can set the parameters in this page.
Band	Choose the working mode of the router.
SSID	The service set identification (SSID) is a unique name to identify the router in the wireless LAN. Wireless stations associating to the router must have the same SSID. Enter a descriptive name that is used when the wireless client connecting to the router.
Encryption	<ul> <li>Configure the wireless encryption mode. You can choose None, WEP, WPA (TKIP), WPA (AES), WPA2 (AES), WPA2 (TKIP), or WPA2 Mixed.</li> <li>Wired equivalent privacy (WEP) encrypts data frames before transmitting over the wireless network.</li> <li>Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft.</li> <li>WPA2 Mixed is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the router through WPA or WPA2.</li> <li>Key differences between WPA and WEP are user authentication and improved data encryption.</li> </ul>

After finishing the settings, click **Next**. The page shown in the following figure appears.



Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnost
	Wizard						
Wizard	Step 5: Confic	uration Saving					
	otep o. comig	uration oaving					
	Click "Finish" to s	ave the settings. Click "Ba	ack" to make more modificat	ions. Click "Reset" to can	cel the settings.		
	_						
	The parameter	rs you set:					
	User Name:	admin					
		admin					
		Disable					
	VPI:	0					
	VCI:	36					
		VC Mux					
	Channel Mode:						
	PPP User Name:	123					
		123					
		Obtain DNS Automatical					

Figure 11 Configuration summary (PPPoE)

In this page, click Finish to complete the wizard configuration of PPPoE. You can modify the settings by clicking the < Back button if necessary. Click Reset to cancel the settings.



If the WAN connection protocol is set to **PPPoA**, the configuration steps are similar to that of PPPoE. For the parameters in these pages, refer to the parameter description of PPPoE.

#### 1483 MER: DHCP

If you select the 1483 MER: DHCP protocol, the page shown in the following figure appears.



<u>()</u>	<u>v*</u>	Red Line	Wireless I	Peripheral		X	
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnosti
Wizard	Wizard Step 3: WAN In	iterface Setup					
	This page allow configuration.	s you to configure the ADS	L settings of the device	A predefined list of co	untry and internet service	provider (ISP) is availa	ble for easy
	(1) Select the co	ountry.					
	(2) Select the IS	P.					
	Note: If the court type, manually e	itry and ISP are not availat inter the VPI and VCI. For	ble in the drop-down list the correct values, plea	you can select Others se contace your ISP.	In this case, you need to	select the protocol and	l connection
	(3) Enter the co	rrect values.					
	(4) Click "Next" t	o continue.					
			Country Others	-			
			ISP Others				
			Protocol 1483 MER:	DHCP			
		Conne	ction Type LLC				
			VPI 0	(0-255)			
			VCI 37	(32-65535	)		
					Back Next		

Figure 12 WAN interface setup (1483 MER:DHCP)

#### The following table describes the parameters in this page.

Field	Description
Country	Select the country from the drop-down list of Country.
ISP	Select the ISP according to the country from the drop-down list. If you do not find the ISP that matches the country, you can select <b>Others</b> .
Protocol	Select 1483 MER: DHCP.
Connection	You can select LLC or VC-Mux.
Туре	
VPI	Virtual path between two points in an ATM network. Its valid value range is from 0 to 255.
	The virtual channel between two points in an ATM
VCI	network, ranging from 32 to 65535 (0 to 31 is reserved
	for local management of ATM traffic).

After finishing the settings, click **Next**. The page shown in the following figure appears.



4		Red Line	Wireless .	Peripheral		<u> </u>	
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Wizard						
Wizard Attention Configue model make it effective forever!		Interface Setup ers of WLAN Interface. e: Cable Cosable 2.4 OB: (8+0+9) LINK_CREATIVEOI None		Back Next≻			

Figure 13 WLAN interface setup (1483 MER:DHCP)

The following table describes the parameters in this page.

Field	Description				
	You can choose Enable or Disable. By default, WAN				
WLAN	interface is enabled.				
Interface	You need to enable WAN interface, and then you can				
	set the parameters in this page.				
Band	Choose the working mode of the router.				
	The service set identification (SSID) is a unique name to				
	identify the router in the wireless LAN. Wireless stations				
SSID	associating to the router must have the same SSID.				
	Enter a descriptive name that is used when the wireless				
	client connecting to the router.				
	Configure the wireless encryption mode. You can				
	choose None, WEP, WPA (TKIP), WPA (AES), WPA2				
	(AES), WPA2 (TKIP), or WPA2 Mixed.				
	<ul> <li>Wired equivalent privacy (WEP) encrypts data</li> </ul>				
	frames before transmitting over the wireless				
Encryption	network.				
	<ul> <li>Wi-Fi protected access (WPA) is a subset of the</li> </ul>				
	IEEE802.11i security specification draft.				
	<ul> <li>WPA2 Mixed is the collection of WPA and WPA2</li> </ul>				
	encryption modes. The wireless client establishes				
	the connection between the router through WPA or				



Field	Description
	WPA2.
	Key differences between WPA and WEP are user
	authentication and improved data encryption.

After finishing the settings, click **Next**. The page shown in the following figure appears.

Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnos
	Wizard						
Wizard	Step 5: Confid	guration Saving					
	Click "Finish" to s	ave the settings. Click "Ba	ack" to make more modifica	tions. Click "Reset" to can	cel the settings.		
	The paramete						
	ine paramete	is you set.					
	User Name:	admin					
	Password:	admin					
	NTP State:	Disable					
	VPI:	0					
	VCI:	37					
		LLC/SNAP					
	Channel Mode:	1483 mer					
	WAN IP Settings	: Obtain an IP address aut	omatically				
		Obtain DNS Automaticall					

Figure 14 Configuration summary (1483 MER:DHCP)

In this page, click Finish to complete the wizard configuration of 1483 MER:DHCP.

You can modify the settings by clicking the **< Back** button if necessary. Click **Reset** to cancel the settings.

#### • 1483 MER: Static IP/1483 Routed

If you select the **1483 MER: Static IP** protocol, the page shown in the following figure appears.



2	wk				< >		<u>ada</u> )
		Red Line W	lireless Pe	ripherals			
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Wizard						
Wizard	Step 3: WAN Ir	nterface Setup					
	This page allow configuration.	s you to configure the ADSL set	tings of the device. A p	redefined list of cour	ntry and Internet service	provider (ISP) is availal	ble for easy
	(1) Select the co	ountry.					
	(2) Select the IS	P.					
	Note: If the cour type, manually e	ntry and ISP are not available in enter the VPI and VCI. For the o	the drop-down list, you orrect values, please cr	i can select Others. Ii ontace your ISP.	n this case, you need to	select the protocol and	l connection
	(3) Enter the co	mect values.					
	(4) Click "Next" 1	to continue.					
			ountry Others				
			ISP Others	-			
		Pn	otocol 1483 MER: Star	tic IP 💌			
		Connection	Type LLC	•			
			VPI 0	(0-255)			
			VCI 38	(32-65535)			
			Idress 192.168.1.1				
			Mask 255, 255, 255, 0				
			teway 192.168.1.1				
		Primary DNS S	Server 192.168.1.9				
					Back Next		

Figure 15 WAN interface setup (1483 MER: Static IP)

The following table describes the parameters in this page.

Field	Description
Country	Select the country from the drop-down list of Country.
ISP	Select the ISP according to the country from the drop-down list. If you do not find the ISP that matches the country, you can select <b>Others</b> .
Protocol	Select 1483 MER: Static IP.
Connection Type	You can select LLC or VC-Mux.
VPI	Virtual path between two points in an ATM network. Its valid value range is from 0 to 255.
VCI	The virtual channel between two points in an ATM network, ranging from 32 to 65535 (0 to 31 is reserved for local management of ATM traffic).
WAN IP Address	Enter the IP address of the WAN interface provided by your ISP.
Subnet Mask	Enter the subnet mask concerned to the IP address of



	the WAN interface provided by your ISP.
Default	Enter the default gateway provided by your ISP.
Gateway	
Primary DNS	Enter the primary DNS server provided by your ISP.
Server	

After finishing the settings, click **Next**. The page shown in the following figure appears.

4	MXX	Red Line	Wireless	Peripheral	->>	X	
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Wizard						
Witard Attention Confo is modeledicial <u>stave</u> for make it effective forecent	Set up the parame	Interface Setup ters of WLAN interface. CC: <sup>O</sup> Enable <sup>C</sup> Disable 2.4 GBz (8+0+0) <u>V</u> LINC, CREATIVEO1 <u>Mone</u> <u>V</u>		Back Next >			

Figure 16 WLAN interface setup (1483 MER: Static IP)

The following table describes the parameters in this page.

Field	Description
	You can choose Enable or Disable. By default, WAN
WLAN	interface is enabled.
Interface	You need to enable WAN interface, and then you can
	set the parameters in this page.
Band	Choose the working mode of the router.
	The service set identification (SSID) is a unique name to
	identify the router in the wireless LAN. Wireless stations
SSID	associating to the router must have the same SSID.
	Enter a descriptive name that is used when the wireless
	client connecting to the router.
	Configure the wireless encryption mode. You can
Encryption	choose None, WEP, WPA (TKIP), WPA (AES), WPA2
	(AES), WPA2 (TKIP), or WPA2 Mixed.



Field	Description
	<ul> <li>Wired equivalent privacy (WEP) encrypts data frames before transmitting over the wireless network.</li> <li>Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft.</li> <li>WPA2 Mixed is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the router through WPA or WPA2.</li> <li>Key differences between WPA and WEP are user authentication and improved data encryption.</li> </ul>

After finishing the settings, click **Next**. The page shown in the following figure appears.

	Wizard					Admin	Diagnos	
	u zaru							
Wizard	Step 5: Configu	ration Saving						
	Click "Finish" to save the settings. Click "Back" to make more modifications. Click "Reset" to cancel the settings.							
	The parameters	Voll cet						
	The parameters	you set.						
	User Name:	admin						
	Password:	admin						
	NTP State:	Disable						
	VPI:	0						
	VCI:	38						
	Encapsulation:	LLC/SNAP						
	Channel Mode:	1483 mer						
	WAN IP Settings:	Use the following IP address	9:					
	WAN IP Address:	192.168.1.1						
	Subnet Mask:	255.255.255.0						
	DNS Settings:	Use the following DNS serve						

Figure 17 Configuration summary (1483 MER: Static IP)

In this page, click **Finish** to complete the wizard configuration of1**483 MER:Static IP**. You can modify the settings by clicking the **< Back** button if necessary. Click **Reset** to cancel the settings.





If the WAN connection protocol is set to **1483 Routed**, the configuration steps are similar to that of **1483 MER: Static IP**. For the parameters in these pages, refer to the parameter description of **1483 MER: Static IP**.

#### • 1483 Bridged

If you select the **1483 Bridged** protocol, the page shown in the following figure appears.

4	<u>wk</u>	Red Line	. Wireless	Peripheral		X	
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Wizard						
Wizard	Step 3: WAN I	nterface Setup					
	This page allow configuration.	rs you to configure the A	DSL settings of the devic	e. A predefined list of co	untry and Internet service	provider (ISP) is availa	ble for easy
	(1) Select the c	ountry.					
	(2) Select the IS	SP.					
			ilable in the drop-down li or the correct values, ple		. In this case, you need to	select the protocol and	d connection
	(3) Enter the co	irrect values.					
	(4) Click "Next"	to continue.					
			Country Others	•			
			ISP Others	•			
			Protocol 1483 Bri	dged 🔽			
		Cor	VPI 0	(0-255)			
			VCI 39	(32-65535	51		
			fast	(	Back Next		

Figure 18 WAN interface setup (1483 Bridged)

#### The following table describes the parameters in this page.

Field	Description
Country	Select the country from the drop-down list of Country.
ISP	Select the ISP according to the country from the drop-down list. If you do not find the ISP that matches the country, you can select <b>Others</b> .
Protocol	Select 1483 Bridged.
Connection Type	You can select <b>LLC</b> or <b>VC-Mux</b> .
VPI	Virtual path between two points in an ATM network. Its valid value range is from 0 to 255.
VCI	The virtual channel between two points in an ATM

network, ranging from 32 to 65535 (0 to 31 is reserved
for local management of ATM traffic).

After finishing the settings, click **Next**. The page shown in the following figure appears.

4	<u>wk</u>	Red Line	Wireless	Peripheral		×,	
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Wizard						
Wizard Attention Confo; in modeledical <u>save</u> to make it effective forewert	Set up the parame	Interface Setup leter of WLAN interface. C Grabile C Disable 2.4 GBE (8+0+81) V LINK_CREATIVEO1 None V		Back Next >			

Figure 19 WLAN interface setup (1483 Bridged)

The following table describes the parameters in this page.

Field	Description					
	You can choose Enable or Disable. By default, WAN					
WLAN	interface is enabled.					
Interface	You need to enable WAN interface, and then you can					
	set the parameters in this page.					
Band	Choose the working mode of the router.					
	The service set identification (SSID) is a unique name to					
	identify the router in the wireless LAN. Wireless stations					
SSID	associating to the router must have the same SSID.					
	Enter a descriptive name that is used when the wireless					
	client connecting to the router.					
	Configure the wireless encryption mode. You can					
	choose None, WEP, WPA (TKIP), WPA (AES), WPA2					
Encryption	(AES), WPA2 (TKIP), or WPA2 Mixed.					
Encryption	<ul> <li>Wired equivalent privacy (WEP) encrypts data</li> </ul>					
	frames before transmitting over the wireless					
	network.					



Field	Description
	<ul> <li>Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft.</li> <li>WPA2 Mixed is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the router through WPA or WPA2.</li> </ul>
	Key differences between WPA and WEP are user
	authentication and improved data encryption.

After finishing the settings, click **Next**. The page shown in the following figure appears.

	3	Red Li	ne Wireless	Peripheral			
Wizard	Wizard	Status	Network	Service	Advanced	Admin	Diagno
	Wizard						
Wizard	Step 5: Confid	guration Saving					
	Click "Finish" to s	ave the settings. Click "	Back" to make more modificat	ions. Click "Reset" to can	cel the settings.		
	The paramete	rs vou set:					
	User Name:	admin					
	Password:	admin					
	Password:	Disable					
	Password:	Disable D					
	Password: NTP State: I VPI: I VCI: :	Disable D 39					
	Password:	Disable D 39 LLC/SNAP					

Figure 20 Configuration summary (1483 Bridged)

In this page, click **Finish** to complete the wizard configuration of **1483 Bridged**. You can modify the settings by clicking the **< Back** button if necessary. Click **Reset** to cancel the settings.

# 3.3 Status

In the navigation bar, choose **Status**. The submenus of **Status** contain **Device Info**, **LAN**, **WLAN**, **WAN**, **Port Mapping**, **Statistics**, and **ARP**.



### 3.3.1 System

Choose **Status** > **Device Info**. The page that is displayed shows the current status and some basic settings of the router, such as uptime, firmware version, upstream and downstream speed.

4	<u>wk</u>	Re	d Line W	/ireless	Periphero				
Status	Wizard	Sta	tus	Network	Service	Advan	ed	Admin	Diagnostic
	Device Info	LAN	WLAN	WAN	Port Mapping	Statistics	ARP		
fig is modified/Click <u>save</u> to nake it effective forever!	This page sho	ws the current sta	tus and some basic	settings of the de	vice.				
	Alias Name		LKW300-21A	2					
	Uptime(hh:m	m:ss)	0.0:5:9						
	Firmware Ve	rsion	V2.1.2			-			
	DSP Version		2918ac30						
	DSL								
	Operational								
	Upstream Sp								
	Downstream								

Figure 21 System status

## 3.3.2 LAN

Choose **Status** > **LAN**. The page that is displayed shows some basic LAN settings of the router. In this page, you can view the LAN IP address, DHCP server status, MAC address, and DHCP client table.

4	<b>WK</b>	Red I	ine W	ireless	Periphero			X	
LAN	Wizard	Status		Network	Service	Advanc	ed	Admin	Diagn
	Device Info	LAN	WLAN	WAN	Port Mapping	Statistics	ARP		
	LAN Sta	s basic LAN settings	of the device.						
	IP Address	auon	192.168.1.1						
	n Address								
	Subnet Mask		255 255 255 0						
	Subnet Mask DHCP Server		255.255.255.0 Enable						
	DHCP Server	ble	Enable						

Figure 22 LAN status

### 3.3.3 WLAN

Choose **Status** > **WLAN**. The page that is displayed shows some basic settings of wireless LAN (WLAN).



			Line	Vireles	is Periphera	15		
WLAN	Wizard	Status		Network	Service	Advanced	Admin	Diagnosti
	Device Info	LAN	WLAN	WAN	Port Mapping	Statistics	ARP	
WLAN Attention modified IClick_save to it effective forever!	WLAN S	tatus s some basic settinį	gs of wireless L	AN (WLAN).				
	Wireless Con	figuration						
	Wireless		Enabled					
	Band		2.4 GHz (B+	G+N)				
	Mode		AP			1		
	Broadcast		Enabled					
	Root							
	Status		Enabled					
	SSID		LINK_CREA	TIVE01				
	Authentication	Mode	Auto					
	Encryption Mo	de	None					
	VAPO							
	Status		Disabled					
	VAP1							
	Status		Disabled					
	VAP2							
	Status		Disabled					
	VAP3							
	Status		Disabled					
	Wireless Clie	nt List		Turbutu	Fundas d Thurs			
	MAC Addre	ss Tx Packet	Rx Packet	Tx Rate (Mbps)	Power Saving Expired Time (s)	1		
	None							
	Current Acce	ss Control List	_	_	_			
	Mode	55 CONTROLLES	Disabled					

Figure 23 WLAN status

### 3.3.4 WAN

Choose **Status** > **WAN**. The page that is displayed shows some basic WAN settings of the router.

4	-WK		Red I	ine	wir	eless I	Periphe	arats		Ż	
WAN	Wizard		Status		Net	work	Service	•	Advanced	Admin	Diagnos
	Device Info	L	AN	WLAN		WAN	Port Mappin	ıg Statis	tics ARP		
	This page		me basic WAN :	Default	Protocol	IP Address	Gateway	Status			
				-	Protocol br1483	IP Address	Gateway	Status			
	Interface	VPI/VCI	Encapsulation	Default Route							

Figure 24 WAN status

## 3.3.5 Port Mapping

Choose **Status** > **Port Mapping**. In this page, you can view the mapping relation and the status of port mapping.



4	MX	Red Lin	e Wireless	Periphera		$\sim$	×	
Port Mapping	Wizard	Status	Network	Service	Advan	ced	Admin	Diagnostic
	Device Info	LAN WL	AN WAN	Port Mapping	Statistics	ARP		
	Status: Di Mapping	Relation			_			
	Select		Interfaces	Status	1			
	Default	LAN1 ,LAN2 ,LAN3,LAN4 ,wis Yaj	in,wlan-vap0,wlan-vap1,wlar p3,a0,pppoe1	wap2,wlan-Enable	ь			
	Group1			-				
	Group2			-				
	Group3							
	Group4			-				

Figure 25 Port mapping

### 3.3.6 Statistics

Choose Status > Statistics. The submenus of Statistics contain Statistics and ADSL Statistics.

#### 3.3.6.1 Statistics

Click **Statistics** on the left pane. The page shown in the following figure appears. In this page, you can view the statistics of each network port.

		~ ~	ed Li	ne l	Vireles	s Pe	riphero				
Statistics	Wizard		Status		Network		Service	Advanced		Admin	Diagnost
	Device Info	LAN	١	VLAN	WAN	Pc	ort Mapping	Statistics	ARP		
Statistics ADSL Statistics	Statist		statistics fo	r transmis	sion and recepti	on regardini	g to network inte	rface.			
	Interface	Rx Packet	Rx Error	Rx Drop	Tx Packet	Tx Error	Tx Drop				
	e1	1661	0	0	1935	0	0				
	a0	0	0	0	0	0	0				
	a1	0	0	0	0	0	0				
	a2	0	0	0	0	0	0				
	a3	0	0	0	0	0	0				
	ə4	0	0	0	0	0	0				
	a5	0	0	0	0	θ	0				
	a6	0	0	0	0	0	0				
	a7	0	0	0	0	0	0				
	w1	40266	0	0	1860	0	46				
	w2	0	0	0	0	0	0				
	w3	0	0	0	0	0	0				
	w4	0	0	0	0	0	0				
	w5	0	0	0	0	0	0				

#### Figure 26 Interface statistics

#### 3.3.6.2 ADSL Statistics

Click **ADSL Statistics** on the left pane. The page shown in the following figure appears. In this page, you can view the ADSL line status, upstream rate, downstream rate, and other information.

DSL Statistics	Wizard	Status	Network	Service	Advanced	Admi	n Diagnostic
	Device Info	LAN WLAN	WAN	Port Mapping	Statistics	ARP	
Statistics ADSL Statistics		nfiguration					
	This page shows t	he setting of the ADSL Ro	uter.				
	ADSL Line Status	activatii	NG.				
	ADSL Mode						
	Up Stream						
	Down Stream	-					
	Attenuation Down						
	Attenuation Up S						
	SNR Margin Dow						
	SNR Margin Up S Attainable Down						
	Attainable Up Ra Vendor ID	LINK CREA	n <i>c</i>				
	Firmware Version						
	CRC Errors	20108030					
	Up Stream BER						
	Down Stream BE						
	Up Output Power						
	Down Output Power						
	Down Stream ES						
	Up Stream ES						
	Down Stream SE	s					
	Up Stream SES						
	Down Stream UA	S					
	Up Stream UAS						

#### Figure 27 ADSL statistics

### 3.3.7 ARP

Choose Status > ARP. In the ARP Table page, you can view current ARP entries.

4	WK.	Rec	Line	Wireless	Periphero			- Solar Section of the section of th	
ARP	Wizard	Statu	IS	Network	Service	Advar	nced	Admin	Diagnosti
	Device Info	LAN	WLAN	WAN	Port Mapping	Statistics	ARP		
ARP		ble							
ARP	ARP Ta		ntries by interro	ogating the current pro	tocol data.				
ARP	This page sho		ntries by interro	ogating the current pro	tocol data.				
ARP	This page sho	ws current ARP e	ntries by interro						

#### Figure 28 ARP information

## 3.4 Network

In the navigation bar, click **Network**. The submenus of **Network** contain **LAN**, **WAN**, and **WLAN**.

### 3.4.1 LAN

Choose Network > LAN. The LAN page that is displayed contains LAN IP, DHCP, and DHCP Static IP.

#### 3.4.1.1 LAN IP

Click **LAN IP** on the left pane. The page shown in the following figure appears. In this page, you can change IP address of the router. The default IP address is 192.168.1.1, which is the private IP address of the router.

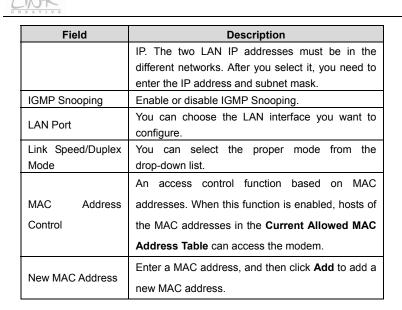


4	WK.	and the	Wireless			× ×	
Network	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
		VAN WLAN					
LAN IP DHCP DHCP Static IP	LAN Interf	ace Setup	ace of your ADSL Router. I	Here you may			
	Interface Name: IP Address: Subnet Mask: IP Secondary IP IP Address: Subnet Mask: IGMP Snooping: Apply Changes LAN Port: Link Speed/Duple	Ethernet1 1921601.1 2552550 0000 © Disable C E	-				
	ETHERNET Status	Table:					
	Select	Port	Link Mode				
		LAN1	Auto Negotiat				
	C	LAN2 LAN3	Auto Negotiat Auto Negotiat				
	•	LAN4	Auto Negotiat				
	MAC Address Con New MAC Addres	Apply Change	2 FLAN3 FLAN4 F	WLAN			
	MAG		ction				

Figure 29 LAN interface setup

The following table describes the parameters in this page.

Field	Description
Interface Name	Display the interface name.
IP Address	Enter the IP address of LAN interface. It is recommended to use an address from a block that is reserved for private use. This address block is "192.168.1.1- 192.168.255.254".
Subnet Mask	Enter the subnet mask of LAN interface. The range of subnet mask is from "255.255.0.0-255.255.255.254".
Secondary IP	Select the checkbox to enable the secondary LAN



After setting, click the Apply Changes button to save the settings.

### 3.4.1.2 DHCP

Dynamic Host Configuration Protocol (DHCP) allows the individual PC to obtain the TCP/IP configuration from the centralized DHCP server. You can configure this router as a DHCP server or disable it. The DHCP server can assign IP address, IP default gateway, and DNS server to DHCP clients. This router can also act as a surrogate DHCP server (DHCP Relay) where it relays IP address assignment from an actual real DHCP server to clients. You can enable or disable DHCP server.

Click **DHCP** on the left pane and the page shown in the following figure appears.



DHCP     Ward     Status     Network     Service     Advanced     Admin     Diagnosti       LAN IP ONCP Stream     VXAN     VXAN     VXAN     Image: Comparison of the Comparison of					Peripherals			$\mathcal{A}$
LANP DHCP DHCP Stand: P ACC Stand: P ChCP Stand	DHCP				Service	Advanced	Admin	Diagnostic
Chick Status P  Chick Status		LAN V	VAN WLA	N				
Autor of Michael     Chickels the DHCP Server Tybu are using the ducks as a DHCP server This page lists the P address pool analysis to the P address pool AUTOr of the pool to hosts on your mittor's at DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You can set the DHCP server to assign IP address to your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to Your hosts on the LAN You (Server 3 address to You (Server 3 addres		DHCP Mod	de					
DHCP Mode: HCP Baver Theorem	Attention ; is modified/Click o make it effective	(1)Enable the DHCP address pools availa your network as the (2)Enable the DHCP the LAN. You can s	Server if you are using able to hosts on your LA y request Internet access Relay if you are using et the DHCP server ip a	this device as a DHCP serv N. The device distributes nu s. he other DHCP server to as ddress.	er. This page lists the IP mbers in the pool to hosts sign IP address to your ho			
None Interface:         Composition         Composition <thcomposition< th=""></thcomposition<>		LAN IP Address:19	2.168.1.1 Subnet Ma	k:255.255.255.0				
Direct Score         2         JV AP3           IP Pool Range:         192:161.1         Show Clent           Subnet Mask:         255:255:25.0         Show Clent           Defeult Galeway:         192:161.1         Instate           Defeult Galeway:         192:161.1         Instate           Domain Name:         540 minutes         Instate			None DHCP Rela	V 12 IT LANS IT LA	N4 🖻 WLAN 🔽 VAPO			
Subnet Illask: 255 255 225 0 Default Galeway: 192 108 1 1 Max Lease Time: 1440 minutes Domain Name: 50main name					_			
Default Gateway:         192 168 1.1           Max Lease Time:         1440           Domain Name:         domain name					Show Client			
Max Lease Time: 1440 minutes Domain Name: domain name								
Domain Name: domain name								
		Max Lease Time:	1440	minutes				
DNS Servers: 192-163.1		Domain Name:						
		DNS Servers:	192.168.1.1					

Figure 30 DHCP mode configuration

In this page, you can select different DHCP modes. You may select **None**, **DHCP Relay**, and **DHCP server**.

#### • None

Select **None** from the drop-down list of **DHCP Mode**, and the page as shown in the following figure appears.

	WX	Red	Line Wirele:	ss Periphera		X	
DHCP	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	LAN	WAN	WLAN				
LAN IP DICP DICP State IP Attention and Attention Taxa and Attention forecer	(1)Enable the address pool your network (2)Enable the the LAN. You (3)If you choo LAN IP Addr DHCP Mode Apply Ch:	n be used to config th DHCP Server if you as swallable to hosts o as they request inter DHCP Relay if you can set the DHCP s use "None", then the ress:192.168.1.1 Su construction of the set of the ress:192.168.1.1 Su	are using the other DHCP serve server ip address. modem will do nothing when th abnet Mask:255.255.255.0 lone	P server. This page lists the IF ites numbers in the pool to ho rr to assign IP address to your	sts on		



#### Figure 31 DHCP mode (None)

If you set the DHCP mode to be **None**, the router does not assign the IP address to the host when it requests an IP address.

#### • DHCP Relay

Select **DHCP Relay** from the drop-down list of **DHCP Mode**, and the page as shown in the following figure appears.

4	WK.	Red Line	e Wireless	Peripheral:		A CONTRACTOR	
DHCP	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	LAN	WAN WLA	N				
LAN IP DHCP		DHCP Mode					
DHCP Static IP Attention Cenfig is modified Click Save to make it effective forever!	(1)Enable the DI address pools a your network as (2)Enable the DI the LAN. You ca	This page can be used to config the DHCP mode None, DHCP Relay or DHCP Server (T)Enable the DHCP Server if you are using this device as a DHCP server. The page lists the IP address pools available to thest on your LAI. The device distributes numbers in the pool to hosts on your networks at they request iterated access. DHCP Server if you are set to DHCP server ip address. THE LAI You can set the DHCP server ip address. DHCP Server is address. The DHCP server ip address.					
	LAN IP Address: 192.168.1.1 Subnet Mask:255.255.0						
	DHCP Mode: DHCP Relay •						
	Relay Server:	192.168.2.242					
	Apply Chang	es Reset					
	Set Vend	orClass IP Range					

Figure 32 DHCP mode (DHCP relay)

Set the DHCP mode to be **DHCP Relay** if you are using another DHCP server to assign an IP address to your hosts on the LAN. You can set the IP address of the relay server.

The following table describes the parameters in this page:

Field	Description
	If you select DHCP Relay, the router acts as a surrogate
DHCP Mode	DHCP Server, and relays the DHCP requests and
	responses between the remote server and client.
Relay Server	Enter the relay server address provided by your ISP.



# DHCP Server

Select **DHCP Serer** from the drop-down list of **DHCP Mode**, and the page as shown in the following figure appears.

4	<u>wk</u>	Red Line	Wireless	Peripheral		Ż	
DHCP	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	LAN	WAN WLAN					
LAN IP DHCP Staff DC Part of the Con- Control of the Control December of the Control Part of the Control of the Control of the Control Part of the Control o	DHCP Mit This page can be (1)Enable the D' address pools an your network as the KJN Vou ca (3)I you choose " LAN IP Address DHCP Mode: Instructors: Default Gatework Max Lease Tim Domain Name:	used to config the DHCP m CP Server 3/you are using to her you are using themes access the theory of themes access the the DHCP server is add Noen". Then the modern will be the DHCP server is point to the the the modern will be the the the themes and point to the the themes and point to the themes and point the themes and point to themes and point to the themes and point to the themes and	is device as a DHCP set The device distributes n extens. do nothing when the hos 1255 255 255.0 I LAN2 IF LAN3 IF L VAP2 IF VAP3 I 192,168,1,254 0 minutes	ver. This page lists the IP umbers in the pool to host ssign IP address to your h ts request a IP address.	ts on		
	DNS Servers: Apply Change Set Vendo	I 192.168.1.1					

Figure 33 DHCP mode (DHCP server)

Set the DHCP mode to be **DHCP Server** if you are using this device as a DHCP server. This page lists an IP address pool available to the hosts on your LAN. The router assigns IP addresses in the pool to the hosts on your network when they request Internet access.

The following table describes the parameters and buttons in this page:

Field	Description
DHCP Mode	If you select <b>DHCP Server</b> , the router can assign IP addresses, IP default gateway and DNS servers to the hosts that are on Windows95, Windows NT and other systems that support the DHCP client.
Interface	Select the network interfaces. DHCP only assigns IP addresses to the selected interfaces.
IP Pool Range	It specifies the first and the last of contiguous IP



Field	Description
	address in the IP address pool.
	Click this button to display the Active DHCP Client
Show Client	Table page. It shows the assigned IP addresses of theclients.
Subnet Mask	Enter the subnet mask of IP address pool.
Default Gateway	Enter the IP default gateway of the IP address pool.
Max Lease Time	The lease time determines the period that the PCs retain the assigned IP addresses before the IP addresses change.
Domain Name	Enter the domain name if you know. If you leave this blank, the domain name obtained by DHCP from the ISP is used. You must enter host name (system name) on each individual PC. The domain name can be assigned from the router through the DHCP server.
DNS Servers	Enter the DNS server addresses.
Set Vendor Class IP Range	Click this button to display the <b>Device IP Range Table</b> page. You can configure the IP address range based on the device type.

# • Active DHCP Client List

Click **Show Client** in the **DHCP Mode** page, and the page as shown in the following figure appears.



# Active DHCP Client Table

This table shows the assigned IP address, MAC address and time expired for each DHCP leased client.

Refresh	Name IP Addr	ess MAC Address	Expiry(s)	Туре
Refresh	Defeat Class	1		
	Refresh Close			

Figure 34 Active DHCP client table

In this page, you can view the IP addresses assigned to the DHCP clients.

#### • Device IP Range Table

Click **Set VendorClass IP Range** (DHCP server mode) in the **DHCP Mode** page, and the page as shown in the following figure appears.

# **Device IP Range Table**

This page is used to configure the IP address range based on device type.

device name:	[			
start address:	192.168.1.			
end address:	192.168.1.			
router address:				
option60				
add delete mod	fy Close			
IP Range Table:				
Select device name	start address	end address	default gateway	option60

#### Figure 35 Device IP range table

In this page, you can configure the IP address range based on the device type. The following table describes the parameters and buttons in this page.

Field	Description
device name	Enter the name of device that needs an IP address
device name	assigned by DHCP.
Start address	Enter the start IP address assigned by DHCP.
end address	Enter the end IP address assigned by DHCP.
router address	Enter the routing gateway address of assigned IP.
Option 60	Enter the string identifier of the assigned device.
add	Click this button to add a new rule.
delete	Click this button to delete a rule.
modify	Click this button to modify the rule.
Close	Click this button to close current window.

## 3.4.1.3 DHCP Static IP

Click **DHCP Static IP** on the left pane and the page shown in the following figure appears. You can assign the IP addresses on the LAN to the specific individual PCs based on their MAC address.

DHCP Static IP	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	LAN V	VAN WLAN					
DHCP DHCP Static IP Attention onlig is modified Click to make it effective forevert		ixed IP/MAC address on y to hosts on your network as 0.0.0.0 000000000000					
	Add Delete S						

Figure 36 DHCP static IP configuration

The following table describes the parameters and buttons in this page.

Field	Description
IP Address	It specifies the IP address of the IP address pool.
MAC Address	Enter the MAC address of a PC in the LAN.
Add	After entering the IP address and MAC address,
	click this button to add an entry to the DHCP
	Static IP Table.
Delete Selected	Select an entry in the DHCP Static IP Table, and
	then click this button to delete the selected entry.
Reset	Click this button to reset the values in this page.
DHCP Static IP Table	It shows the assigned IP addresses based on the
	MAC addresses.

# 3.4.2 WAN

Choose Network > WAN. The submenus of WAN contain WAN, Auto PVC, ATM Settings, and ADSL Settings.

#### 3.4.2.1 WAN

Click **WAN** on the left pane and the page shown in the following figure appears.



WAN	Wizard	Chatan	Network	Complex.	Advanced	Admin	Diagnosti		
WAN	LAN	Status WAN W		Service	Advanced	Admin	Diagnosti		
WAN	Channe	I Configurati	on						
Auto PVC ATM Settings ADSL Settings	VPI/VCI in each	connection can be separa n Permanent Virtual Circu namic IP, Static IP or Brid	ited virtually into multiple char it (PVC). In each PVC you car ge mode.	nels by assigning different a also set the connection p	rotocol				
ention modified/Click ske it effective srever!	Note : The "Cor PPPoA is "Mar	Note: The "Connect" and "Disconnect" button will be enable only when the connect type of PPPPG and PPPPGA is "Menual"							
	Default Route	Default Route Selection: C Auto @ Specified							
	VPI: Channel Mod	VCI: 35 e: 1483 Bridged 💌	Encapsulation: CLLC C Enable NAPT: I	VC-Mux					
		e: 1483 Bridged 💌		VC-Mux	-				
	Channel Mod Enable IGMP: PPP Settings:	e: 1483 Bridged 💌	Enable NAPT:		-				
	Channel Mod Enable IGMP: PPP Settings: User Name: Type: WAN IP Settin	e: T483 Bridged V : Continuous	Enable NAPT: I Password:		-				
	Channel Mod Enable IGMP: PPP Settings: User Name: Type:	e: 1483 Bridged V : Continuous ngs: C Fixed IP	Enable NAPT:	nin):	-				
	Channel Mod Enable IGMP: PPP Settings: User Name: Type: WAN IP Settir Type:	e: 1483 Bridged V : Continuous ngs: C Fixed IP	Enable NAPT: I	nin):	-				
	Channel Mod Enable IGMP: PPP Settings: User Name: Type: WAN IP Settir Type: Local IP Addr	e: 1483 Bridged   :  Continuous ngs:   ·  Fixed IP ress:  ·  ·  ·  ·  ·  ·  ·  ·  ·  ·  ·  ·  ·	Enable NAPT: I	nin):	-				
	Channel Mod Enable IGMP- PPP Settings: User Name: Type: WAN IP Settin Type: Local IP Add Netmask: Default Route Unnumbered	e: [1433 Braged  F Continuous F Continuous F F Continuous	Enable NAPT: I Password: Idle Time (r C DHCP Remote (P) C Enable	nin):	-				
	Channel Mod Enable IGMP- PPP Settings: User Name: Type: WAN IP Settin Type: Local IP Add Netmask: Default Route Unnumbered	e: 1403 Bridged  F F Continuous  P F F Continuous  P F Continuous  C F C C C C C C C C C C C C C C C C C	Enable NAPT: F Password: Idle Time (r Remote IP Remote IP Cable odfy Delete Reset F	ninj:					

Figure 37 Channel configuration

In this page, you can configure the WAN interface of your router. You can add, delete, or modify a PVC entry. This page provides 6 types of channel modes, including **1483 Bridged**, **1483 MER**, **PPPoE**, **PPPoA**, **1483 Routed** and **IPoA**.

The following table describes the parameters and buttons in this page:

Field	Description
Default Route Selection	You can choose Auto or Specified.
	The virtual path between two points in an
VPI	ATM network, ranging from 0 to 255.
	The virtual channel between two points in an
VCI	ATM network, ranging from 32 to 65535 (1 to
	31 are reserved for known protocols)
Encapsulation	You can choose LLC and VC-Mux.
Channel Made	You can choose 1483 Bridged, 1483 MER,
Channel Mode	PPPoE, PPPoA, 1483 Routed or IPoA.
Enable NAPT	Select it to enable the NAPT function of the



Field	Description
	router. If you do not select it and you want to
	access the Internet normally, you must add a
	route on the uplink device. Otherwise, the
	access to the Internet fails. Normally, it is
	required to enable NAPT.
Enable IGMP	You can enable or disable IGMP function.
PPP Settings	
User Name	Enter the correct user name provided by your ISP.
Password	Enter the correct password provided by your ISP.
	You can choose Continuous, Connect on
Туре	Demand, or Manual if the channel mode is
	set to PPPoE or PPPoA.
	When selecting Connect on Demand, you
	need to enter the time of idle timeout. Within
Idle Time (min)	the preset time, if the router does not detect
	the flow from the user end continuously, the
	router automatically disconnects the PPPoE
	or PPPoA connection.
WAN IP Settings	
	You can choose Fixed IP or DHCP.
	• If you select Fixed IP, you should enter
	the local IP address, remote IP address
Туре	and subnet mask.
	<ul> <li>If you select DHCP, the router serves as</li> </ul>
	a DHCP client, and the WAN IP address
	is assigned by the remote DHCP server.
Local IP Address	Enter the IP address of the WAN interface
	provided by your ISP.
Remote IP Address	Enter the gateway IP address that is provided
	by your ISP.
Netmask	Enter the subnet mask of the local IP
	address.



Field	Description			
Default Route	You may select Disable, Enable, or Auto.			
Unnumbered	Select this checkbox to enable the IP			
Grindinbered	Unnumbered function.			

You can edit the parameters of an entry in the **Current ATM VC Table** by clicking the icon  $\checkmark$ . If you click the icon of an entry, this entry can be deleted.

The following describes how to configure a PPPoE (0/32) connection.

#### D Note:

The figures and the configuration steps below are illustrated as an example. The figures and configuration description may vary according to the channel mode that you select.

- Step 1 Set the VPI to 0, VCI to 32.
- Step 2 Select PPPoE as the channel mode.
- Step 3 Enter the user name and password provided by your ISP for PPPoE dial-up.

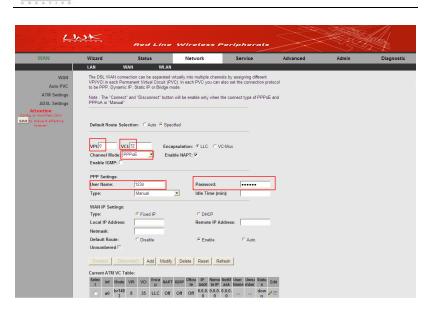


Figure 38 Configuring the parameters of PPPoE connection

Step 4 Click Add to add the PVC to the Current ATM VC Table.

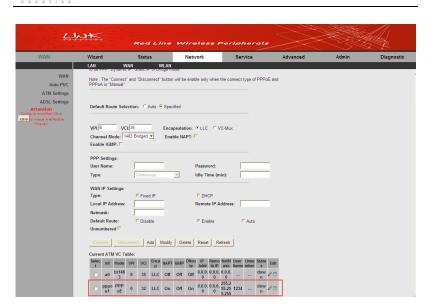


Figure 39 Adding a PPPoE connection

## 3.4.2.2 Auto PVC

Click Auto PVC on the left pane and the page shown in the following figure appears.



#### Figure 40 Auto PVC configuration

In this page, you can add or delete an entry of auto PVC.

The following table describes the parameters and buttons in this page.

Field	Description
Probe WAN PVC	Click the <b>Probe</b> button and system automatically detects current PVCs supported by the office
	end.
VPI	Enter the VPI value.
VCI	Enter the VCI value.

After setting, click the **Add** button to an entry of auto PVC to the **Current Auto-PVC** table.

# 3.4.2.3 ATM Settings

Click **ATM Setting** on the left pane. The page shown in the following figure appears. In this page, you can configure the parameters of the ATM, such as QoS, PCR, CDVT, and SCR.

4	<u>wk</u>	Red	Line W	ireless	Periphe	rals	<u> </u>	
ATM Settings	Wizard	Status	P	Network	Service	Advanced	Admin	Diagnostic
	LAN	WAN	WLAN					
WAN Auto PVC		ettings						
ATM Settings ADSL Settings	This page is used to configure the parameters for the ATM of your ADSL Router. Here you may change the setting for QoS, PCR.CDVT, SCR and MBS.							
Attention Config is modified:Click S3VE to make it effective forever!	VPI:	VPE VCE QeS. UBR						
	PCR: CDVT: SCR: MBS:							
	Apply Changes Reset							
	Current ATM							
	Select V			CDVT SC				
		3 35 UE		0				
	0	) 32 UE	3R 6144	0				

Figure 41 ATM settings

 Field
 Description

 VPI
 The virtual path identifier of the ATM PVC

 VCI
 The virtual channel identifier of the ATM P

The following table describes the parameters of this page:

VPI	The virtual path identifier of the ATM PVC.
VCI	The virtual channel identifier of the ATM PVC.
QoS	The QoS category of the PVC. You can choose
	UBR, CBR, nrt-VBR, or rt-VBR.
PCR	Peak cell rate (PCR) is the maximum rate at
	which cells can be transmitted along a connection
	in the ATM network. Its value ranges from 1 to
	65535.
CDVT	Cell delay variation tolerance (CDVT) is the
	amount of delay permitted between ATM cells (in
	microseconds). Its value ranges from 0 to
	4294967295.
SCR	Subtain cell rate (SCR) is the maximum rate that
	traffic can pass over a PVC without the risk of cell
	loss. Its value ranges from 0 to 65535.
MBS	Maximum burst size (MBS) is the maximum
	number of cells that can be transmitted at the
	PCR. Its value ranges from 0 to 65535.

After finishing setting, click **Apply Changes** to save the settings.

#### 3.4.2.4 ADSL Settings

Click **ADSL Settings** on the left pane. The page shown in the following figure appears.



WAN Auto PVC ATM Settings ADSL Settings Attention gis monifiest Click	ADSL Set	Status VAN WLA Lings u to choose which ADS		Service	Advanced	Admin	Diagnostic
WAN Auto PVC ATM Settings ADSL Settings Attention fig ar modified:Click to make a defective	ADSL Sett	ings					
Auto PVC ATM Settings ADSL Settings Attention fig is modified/Click to make it effective	This page allows yo						
ATM Settings ADSL Settings Attention fig is modified/Click to make it effective	This page allows yo						
ADSL Settings Attention fig is modified/Click to make it effective	This page allows yo will support.	u to choose which ADS					
Attention fig is modified Click 6 to make it effective	ini sopport.		L modulation settings your i	nodem router			
nfig is modified/Click 9 to make it effective							
e to make it effective							
forevert	ADSL Modulat						
		G.Lite					
		🖾 G.Dmt					
		₩ T1.413					
		ADSL2					
	Annesi Onting	ADSL2+					
	AnnexL Optior	Enabled					
	AnnexM Option						
	Annexin option	Enabled					
	ADSL Capabili						
		Bitswap Enab	sle				
		SRA Enable					
	Apply Changes						

Figure 42 ADSL settings

In this page, you can select the DSL modulation schemes. Usually, you do not need to change the factory default settings. The ADSL modulation schemes that router supports contain **G.lite**, **G.Dmt**, **T1.413**, **ADSL2**, and **ADSL2+**. The router negotiates the modulation modes with the DSLAM. You can also enable or disable the **AnnexL Option**, **AnnexM Option**, and **ADSL Capability**.

#### 3.4.3 WLAN

#### 3.4.3.1 Basic Settings

Choose **WLAN** > **Basic** and the following page appears. In this page, you can configure the parameters for wireless LAN clients that may connect to the modem.



4	NK.	Red Lin	e Wireless	Peripheral:	. >>>	X V	And the second
WLAN	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	LAN W	AN WLA	N				
Basic Security	Wireless B	asic Setting	s				
Access Control List MBSSID	This page is used to o	configure the paramete	rs for your wireless network				
Advanced	🗆 Disable Wirele	ss LAN Interface					
WPS	Band:	2.4 GHz (B+G+N)	•				
Attention	Mode:	AP 💌					
ifig is modified/Click save to make it effective forever!	SSID:	LINK_CREATIVE01					
	Channel Width:	40mHz ·					
	Control Sideband:	Upper 💌					
	Country/Area:	Italy					
	Channel Number:	Auto 💌 Current	t Channel: 11				
	Radio Power (Percent):	100% -					
	Associated Clients:	Show Active Cli	ents				
	Apply Changes						

Figure 43 Wireless basic settings

The following table describes the parameters in this page:

Field	Description
Disable Wireless LAN Interface	Enable or disable the wireless LAN interface.
Band	Choose the working mode of the modem.
Mode	Choose the network model of the modem, which is varied according to the software. By default, the network model of the modem is <b>AP</b> .
SSID	The service set identification (SSID) is a unique name to identify the modem in the wireless LAN. Wireless stations associating to the modem must have the same SSID. Enter a descriptive name that is used when the wireless client connecting to the modem.
Channel Width	Choose a proper channel width from the drop-down list.
Control Sideband	You may select Upper or Lower.
Country/Area	Select the country from the drop-down list.
Channel Number	A channel is the radio frequency used by 802.11b/g/n wireless devices. There are 13

Field	Description
	channels (from 1 to 13) available depending on
	the geographical area. You may have a choice of
	channels (for your region) and you should use a
	different channel from an adjacent AP to reduce
	the interference. Interference and degrading
	performance occurs when radio signal from
	different APs overlap.
	Choose a channel from the drop-down list.
	You can choose the transmission power of the
Radio Power	radio signal. The default one is <b>100%</b> . It is
	recommended to choose the default value100%.
	Click Show Active Clients to view the information
Associated Clients	of the wireless clients that are connected to the
	modem.

After setting, click **Apply Changes** to save the settings of this page.

# 3.4.3.2 Security

Choose WLAN > Security and the following page appears.



Figure 44 Wireless security setup

The following table describes the parameters in this page:

Field	Description
SSID TYPE	Select the proper SSID type.
Encryption	<ul> <li>Configure the wireless encryption mode. You can choose None, WEP, WPA (TKIP), WPA (AES), WPA2 (AES), WPA2 (AES), WPA2 (AES), WPA2 (AES), WPA2 (AES), WPA2 (TKIP), or WPA2 Mixed.</li> <li>Wired equivalent privacy (WEP) encrypts data frames before transmitting over the wireless network.</li> <li>Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft.</li> <li>WPA2 Mixed is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the modem through WPA or WPA2.</li> <li>Key differences between WPA and WEP are user authentication and improved data encryption.</li> </ul>
Set WEP Key	It is available when you set the encryption mode to WEP. Click it, and the Wireless WEP Key Setup page appears.
Use 802.1x Authentication	Enable or disable 802.1x authentication.
WEP 64bits/WEP 128bits	If the encryption mode is set to <b>WEP</b> , you can set the WEP key length.
WPA Authentication Mode	<ul> <li>If you select Enterprise (RADIUS), enter the port, IP address, and password of the Radius server. You need to enter the username and password provided by the Radius server when the wireless client connects the modem.</li> <li>If you select Personal (Pre-Shared Key), enter the pre-shared key in the Pre-Shared Key field.</li> <li>If the encryption is set to WEP, the modem uses</li> </ul>



Field	Description
	802.1 X authentication, which is Radius
	authentication.
Pre-Shared Key	The WPA key format contains Passphrase or Hex
Format	(64 characters).
Dra Charad Kau	Set the WPA pre-shared key according to the key
Pre-Shared Key	format.
Authentication	Enter the port, IP address, and password of the
RADIUS Server	Radius server.

Click Set WEP Key, and the following page appears.

# Wireless WEP Key Setup

This page allows you setup the WEP key value. You could choose use 64-bit or 128-bit as the encryption key, and select ASCII or Hex as the format of input value.

SSID TYPE:	Root ⊆ VAP0 ⊆ VAP1 ⊆ VAP2 ⊆ VAP3
Key Length:	64-bit 💌
Key Format:	ASCII (5 characters) 💌
Default Tx Key:	Key 1 💌
Encryption Key 1:	****
Encryption Key 2:	****
Encryption Key 3	****
Encryption Key 4:	****
Apply Changes Close	Reset

Figure 45 Wireless WEP key setup

In this page, you can set the WEP key.

The following describes the parameters in this page:

Field	Description
SSID TYPE	Select the proper SSID type.
Key Length	Choose the WEP key length. You can Choose 64-bit or 128-bit.
Key Format	<ul> <li>If you choose 64-bit, you can choose ASCII (5 characters) or Hex (10 characters).</li> <li>If you choose 128-bit, you can choose ASCII (13 characters) or Hex (26 characters).</li> </ul>
Default Tx Key	Choose the index of WEP Key. You can choose <b>Key</b> <b>1</b> , <b>Key 2</b> , <b>Key 3</b> , or <b>Key 4</b> .
Encryption Key 1 ~ 4	<ul> <li>The Encryption keys are used to encrypt the data.</li> <li>Both the modem and wireless stations must use the same encryption key for data transmission.</li> <li>If you choose 64-bit and ASCII (5 characters), enter any 5 ASCII characters.</li> <li>If you choose 64-bit and Hex (10 characters), enter any 10 hexadecimal characters.</li> <li>If you choose 128-bit and ASCII (13 characters), enter any 13 ASCII characters.</li> <li>If you choose 128-bit and Hex (26 characters), enter any 26 hexadecimal characters.</li> </ul>

After setting, click Apply Changes to save the settings of this page.

# 3.4.3.3 Access Control List

Choose WLAN > Access Control List and the following page appears.

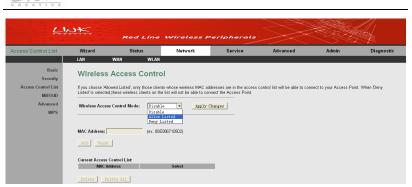


Figure 46 Wireless access control

In this page, you can configure the access control of the wireless clients.

Select Allow Listed in the Wireless Access Control Mode field to enable the white list function. Only the devices whose MAC addresses are listed in the Current Access Control List can access the router.

Select **Deny Listed** in the **Wireless Access Control Mode** field to enable the black list function. The devices whose MAC addresses are listed in the **Current Access Control List** are denied to access the router.

Select a proper access control mode, and then enter a MAC address. Click the **Add** button to add a MAC entry to the **Current Access Control List**. You may also delete an entry or all entries form this list.

#### 3.4.3.4 MBSSID

Choose WLAN > MBSSID and the following page appears.



IBSSID	Wizard		Network	Service	Advanced	Admin	Diagnos
	LAN WAN	WLAN					
Basic	Wireless Multip	le BSSID Setup					
Security s Control List	This page allows you to get	t virutal access points(VAP). Here	you con onobio/dicable	with all AP, and out its Pl	ID and authoritication type, alia	k"Apply Changes" to take it off	uct.
MBSSID		rvirutai access points(vAP). Here	you can enable/disable	vinual AF, and secils 5:	sic) and admenucation type: circ	k Apply changes to take it en	ICL.
anced	Enable VAP0						
WPS	SSID:	RLAN-0000					
	broadcast SSID:	C Enable C Disable					
	Relay Blocking:	C Enable C Disable					
	Authentication Type:	🧧 Open System 🥤 Sha	ired Key 🥗 Auto				
	Enable VAP1						
	SSID:	8LAH-1111					
	Broadcast SSID:	C Enable C Disable					
	Relay Blocking:	C Enable C Disable					
	Authentication Type:	C Open System C Sha	ired Key 🦩 Auto				
	Enable VAP2						
	SSID:	WLAN-2222					
	Broadcast SSID:	🧉 Enable \Upsilon Disable					
	Relay Blocking:	Enable 🧉 Disable					
	Authentication Type:	C Open System C Sha	ired Key 🥤 Auto				
	Enable VAP3						
	SSID:	RLAH-3333					
	Broadcast SSID:	C Enable C Disable					
	Relay Blocking: Authentication Type:	C Enable C Disable					
	Addrend Cadon Type.	👻 Open System 💉 Sha	ired key 🗠 Auto				

Figure 47 Wireless multiple BSSID setup

In this page, you can configure multiple VAPs (Virtual Access Points).

The following table describes the parameters in th	nis page.
--	-----------

Field	Description
Enable	Enable or disable the selected VAP.
VAP0/1/2/3	
SSID	The service set identification (SSID) is a unique name
	to identify the router in the wireless LAN.
Relay Blocking	Enable or disable relay blocking.
Broadcast	Enable this function if you want to hide any access
SSID	point, so a station cannot obtain the SSID through
	passive scanning.
Authentication	You may select Open System, Shared key or Auto.
Туре	



After finishing the settings, click the Apply Changes button to apply the settings.

#### 3.4.3.5 Advanced Settings

Choose WLAN > Advanced and the following page appears.

# Note:

The parameters in the **Wireless Advanced Settings** page can only be modified by the professional personnel. It is recommended that you keep the default values.

Advanced	Wizard	Status	Network	Service	Advanced	Admin	Diagnos
	LAN W#	IN WLAN					
Basic Security	Wireless Ac	lvanced Set	tings				
Access Control List MBSSID	These settings are only what effect the change			sufficient knowledge about	wireless LAN. These settings	should not be changed	unless you know
Advanced	Authentication Type	· C Onon Sustam	C Shared Key · Auto				
WPS	Fragment Threshold		-2346)				
	RTS Threshold:	2347 (0-23	347)				
	Beacon Interval:	100 (20-1	1024 ms)				
	DTIM Interval:	1 (1-25	56)				
	Data Rate:	Auto 💌					
	Preamble Type:	Cong Preamble	C Short Preamble				
	Broadcast SSID:	Enabled C D	lisabled				
	Relay Blocking:	C Enabled 🔍 D	lisabled				
	Ethernet to Wireless Blocking:	C Enabled C D	lisabled				
	Wifi Multicast to Unicast:	Enabled C D	lisabled				
	Aggregation:	Enabled C D	lisabled				
	Short GI:	Enabled      D					

Figure 48 Wireless advanced settings

In this page, you can configure the wireless advanced parameters.

The following table describes the parameters in this page.

Field	Description
	You can choose <b>Open System</b> , <b>Shared Key</b> , or <b>Auto</b> .
Authentication Type	In the open system mode, the wireless client can directly connect to the device In the encryption authentication mode, the wireless client connects to the router through the shared

Field	Description
	key.
Fragment Threshold	Packets that are larger than this threshold are fragmented into multiple packets. Try to increase the fragmentation threshold if you encounter high packet error rates. Do not set the threshold too low, since this can result in reduced networking performance.
RTS Threshold	If a network packet is smaller than the preset RTS threshold size, the RTS/CTS mechanism will not be enabled. The Router sends Request to Send (RTS) frames to a particular receiving station and negotiates the sending of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission. The RTS Threshold value should remain at its default value of 2347.
Beacon Interval	Beacon is a packet of information that is sent from a connected device to all other devices where it announces its availability and readiness. A beacon interval is a period of time (sent with the beacon) before sending the beacon again. The beacon interval may be adjusted in milliseconds (ms). The default value is recommended.
DTIM Interval	Set the proper DTM value. The DTIM Interval determines the number of AP beacons between each Delivery Traffic Indication Message (DTIM). This informs clients of the next window for listening to broadcast and multicast messages.
Data Rate	Choose the proper transmission rate in the drop-down list.
Preamble Type	Preambles are a sequence of binary bits that help the receivers synchronize and ready for receipt of a data transmission. Some older wireless systems

LWK

Field	Description
	like 802.11b implementation use shorter preambles. If you are having difficulty connecting to
	an older 802.11b device, try using a short
	preamble. You can select short preamble only if the 54g mode is set to 802.11b.
	Select whether the router broadcasts SSID or not.
	You can select Enable or Disable.
	<ul> <li>Select Enable, and the wireless client</li> </ul>
Broadcast SSID	searches the router through broadcasting
	SSID.
	• Select <b>Disable</b> to hide SSID, and the wireless
	clients can not search the SSID.
Relay Blocking	If you select Enable, the wireless clients that are
Itelay blocking	connected to the router can not intercommunicate.
Ethernet to	Whether the wireless network can communicate
Wireless Blocking	with the Ethernet network or not.
Wifi Multicast to	After enabling this function, the transmission quality
Unicast	of wireless multicast stream can be improved.
Aggregation	It is applied when the destination end of all MPDU
Aggregation	are for one STA.
Short GI	It is not recommended to enable GI in obvious
SHULLGI	environment of Multi-path effect.

After finishing the settings, click **Apply Changes** to save the settings.

# 3.4.3.6 WPS

Choose WLAN > WPS and the following page appears.



Figure 49 Wi-Fi protected setup

By default, the WPS service is enabled.

This page provides two WPS modes, including PIN and PBC modes.

At present, WPS supports three types of operation modes, including Enrollee mode, Registrar mode, and PBC mode. Enrollee and Registrar modes need to apply PIN code negotiation.

Enrollee Mode

- Step1 Select the enrollee mode on the wireless client and the configuration utility of the wireless client will generate a random PIN code, for example, 12345678.
- Step2 In the Wi-Fi Protected Setup page, enter the PIN code of the wireless client to the Client PIN Number field on the wireless router, and then click the Start PIN button within 2 minutes. After you click the Start PIN button, the wireless router will automatically connect to the wireless client.

4		Red Line	Wireless F	Peripherals	$\searrow$		
WPS	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	LAN	WAN WLAN					
Basic Security Access Control List MBSSID Advanced WPS	This page allow	Configu ber:  85400203 Configuration: Start PE es Reset	red <sup>(*</sup> UnConfigured Regenerate PIN 20		uld let your wireless client auto	mically syncronize its se	etting and connect

#### Figure 50 Enrollee mode setup

#### Registrar Mode

Step1 View the PIN code of the ADSL router in the Wi-Fi Protected Setup page, for example, 31668729.

Red Line Wireless Peripherals							
WPS	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	LAN	WAN WLAN	l .				
Basic Security Access Control List MBSSID Advanced WPS	This page allor to the Access Disable WPS Status: Self-PIN Num	iber: 31668729 Configuration: Start 3 ges Reset	ured UnConfigured		uid let your wireless client aut	omically syncronize its s	etting and connect

Figure 51 Registrar mode setup (ADSL router)

**Step2** Select **Registrar** mode on the wireless client and enter the PIN code of the ADSL router within 2 minutes. After you click the **PIN** button, the wireless client will automatically connect to the ADSL router. See the following figure:

Profile	لللل الله الله الله الله الله الله الله	rced Statistics	WAAM	<b>Ø</b> WPS	Radio On/Off	褑 🛓
		WPS AP List				Rescan
ID :	default		00-E0-4C-81-86-D1	1	and a second	Information
						Pin Code
		— WPS Profile List —				668729 Renew
ExRegNW277000				T	Re	egistrar 💌
.1						Detai
•						Connect
PIN	WPS Associate IE		Progress >> 0%		1000	Rotate
PBC	WPS Probe IE	WPS status is disconne	ected		in the second	Disconnect
	Auto					Export Profile
PBC		WPS status is disconne	ected		-	

Figure 52 Registrar mode setup (client)



#### PBC Mode

- Step1 In the Wi-Fi Protected Setup page, click the Start PBC button or press the WPS button for more then 3 seconds on the rear panel of the ADSL router.
- Step2 Press the WPS button on the wireless client within 2 minutes, and then the ADSL router will automatically establish the connection with the wireless client.

Note:

WPS can only be used with the wireless client devices that have a compatible WPS component.

# 3.5 Service

In the navigation bar, click **Service**. The submenus of **Service** contain **DNS**, **Firewall**, **UPnP**, **IGMP Proxy**, **TR-069**, and **ACL**.

# 3.5.1 DNS

Domain Name System (DNS) is an Internet service that translates the domain name into IP address. Because the domain name is alphabetic, it is easier to remember. The Internet, however, is based on IP addresses. Every time you use a domain name, DNS translates the name into the corresponding IP address. For example, the domain name www.example.com might be translated to 198.105.232.4. The DNS has its own network. If one DNS server does not know how to translate a particular domain name, it asks another one, and so on, until the correct IP address is returned. Choose **Service > DNS**. The submenus of **DNS** include **DNS**, and **DDNS**.

#### 3.5.1.1 DNS

Click **DNS** on the left pane and the following page appears.



		Act Line	wireless F	Periphera		~5~	
DNS	Wizard	Status	Network	Service	Advanced	Admin	Diagnost
	DNS Fi	irewall UPnP	IGMP Proxy	TR-069	ACL		
DDNS		o configure the DNS server ig Automatically	addresses for DNS Rela	y			
	C Set DNS M DNS 1:	anually 0.0.0.0					
	DNS 2:						



The following table describes the parameters and buttons of this page:

Field	Description
Attain DNS Automatically	If you select it, the router accepts the first received DNS assignment from one of the PPPoA, PPPoE or MER enabled PVC(s) during the connection establishment.
Set DNS Manually	If you select it, enter the IP addresses of DNS server.
DNS1-3	Enter the IP addresses of the DNS servers.

After setting, click the Apply Changes button to save the settings.

#### 3.5.1.2 DDNS

Click **DDNS** on the left pane, and the page shown in the following figure appears. This page is used to configure the dynamic DNS address from DynDNS.org or TZO. You can add or remove to configure dynamic DNS.

1		1		1	١.	/	/
L		J	A.	J	1	-	
0	R	1	A	T	Ť	V	12

DDNS	Wizard	Status	Network	Service	Advanced	Admin	Diagnos
	DNS F	irewall UPnP	IGMP Proxy	TR-069	ACL		
DNS	Dynamic	DNS Configura	ation				
DDNS	Dynamic	bito configura					
	This page is used t	o configure the Dynamic DN	S address from DynDNS	org or TZO.Here you ca	n Add/Remove to configure Dyn	amic DNS.	
	DDNS provider:	DynDNS. org					
	Hostname:	Dyrubias. org					
	Interface:	pppoe1 -					
	Enable:	7					
	DynDns Settings:						
	Username:						
	Password:						
	TZO Settings:						
	Email:						
	Key:	í					

Figure 54 DDNS configuration

This page is used to configure the DDNS settings.

The router supports two providers "DynDNS.org" and "TZO".

The following table describes the parameters in this page.

Field	Description
	Select the DDNS provider from the drop-down list. You
DDNS provider	can select DynDNS.org or TZO.
Hostname	Enter the hostname of DDNS.
Interface	Select the WAN interface of the router.
Enable	Enable or disable DDNS.
DynDns Settings	
Username	Enter the user name provided by DDNS provider.
Password	Enter the password provided by DDNS provider.
TZO Settings	
Email	Enter the email provided by DDNS provider.
Key	Enter the key provided by DDNS provider.

After setting, click the Add button to add a DDNS entry to the Dynamic DDNS Table.



# 3.5.2 Firewall

Choose Service > Firewall. The submenus of Firewall include IP/Port Filter, MAC Filter, URL Filter, Anti-DoS, and Software Forbidden.

#### 3.5.2.1 IP/Port Filter

Click **IP/Port Filter** on the left pane, and the page shown in the following figure appears. Entries in the table are used to restrict certain types of data packets through the gateway. These filters are helpful in securing or restricting your local network.

P/Port Filter	Wizard	Status	Network	Service	Advanced	Admin	Diagnos
	DNS Firew	all UPnP	IGMP Proxy	TR-069	ACL		
IP/Port Filter MAC Filter	IP/Port Filte	ring					
URL Filter Anti-DoS	Entries in this table are such filters can be help	used to restrict certain typ ful in securing or restricting	es of data packets from y your local network.	our local network to	o Internet through the Gatewa	ay. Use of	
ftware Forbidden	Outgoing Default Acti Incoming Default Act	ion: @ Permit © Deny ion: © Permit @ Deny					
	Rule Action: Protocol:	Permit      De     IP	eny				
	Direction:	Upstream 💌					
	Source IP Address:		Mask Ad		55. 255. 255		
	Dest IP Address: SPort:		Mask Ad DPort:				
	Enable:		DF off.				

Figure 55 IP/Port filter

The following table describes the parameters in this page.

Field	Description
Outgoing Default Action	You may select <b>Permit</b> or <b>Deny</b> .
Incoming Default Action	You may select <b>Permit</b> or <b>Deny</b> .
Rule Action	You may select Permit or Deny.
Protocol	You may select IP, ICMP, TCP, or UDP.
Direction	You may select Upstream or Downstream.
Source IP	Enter the source IP address and subnet mask.



Field	Description
Address/ Mask	
Address	
Dest. IP	Enter the destination IP address and subnet mask.
Address/ Mask	
Address	
SPort/ DPort	Enter the source port and destination port.
Enable	Enable or disable the rule.

After finishing setting, click Apply Changes to add a new rule of the IP/Port filter.

#### 3.5.2.2 MAC Filter

Click **MAC Filter** on the left pane, and the page shown in the following figure appears. Entries in the table are used to restrict certain types of data packets from your local network to Internet through the gateway. These filters are helpful in securing or restricting your local network.

4	WX	Red Line	Wireless F	Peripheral	-	× za	
MAC Filter	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
MAC Filter IP.Port Filter MAC Filter URL Filter Anti Dos Software Fotbidden	DNS F MAC Filte Entries in this tab Internet through th network. Outgoing Defaul	itewall UPAP aring the second to restrict central as Gateway. Use of such filt the Palley Deny CAU The Policy Callow Controlling (1) (1) (1) (1) (1) (1) (1) (1)	IGMP Proxy n types of data packets fro ers can be helpful in secur ow	TR-069	ACL	Admin	Diagnostic
		irection Source MA	IC Destinat	tion MAC Act	lion		
	Delete Del	lete All					

Figure 56 MAC filtering

The following table describes the parameters in this page.

Field	Description
Outgoing	You may select <b>Deny</b> or <b>Allow</b> .
Default Policy	
Incoming	You may select Deny or Allow.
Default Policy	
Direction	You may select incoming or outcoming.
Action	You may select Deny or Allow.
Source MAC	Set the source MAC address of the host that needs to
Source MAC	be filtered.
Destination	Set the destination MAC address of the host that
MAC	needs to be filtered.

After finishing setting, click Add to add a new rule of the MAC filter.

# 3.5.2.3 URL Blocking

Click **URL Filter** on the left pane, and the page shown in the following figure appears. This page is used to block a fully qualified domain name, such as tw.yahoo.comand and filtered keyword. You can add or delete FQDN and filtered keyword.

4	<u>v≮</u>	Red Lin	e Wirelessf	eriphera			
URL Filter	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	DNS	Firewall UP	1P IGMP Proxy	TR-069	ACL		
IP:Port Filter MAC Filter <u>URL Filter</u> Anti-DoS oftware Forbidden		Capability: 5 Delete	uration eyword. Here you can add/de ©Disable C Enable	lete filtered keyword.			

Figure 57 URL blocking configuration

The following table describes the parameters and buttons of this page:

Field	Description
URL Blocking	You can choose Disable or Enable.
Capability	• Select <b>Disable</b> to disable URL blocking function



Field	Description
	and keyword filtering function.
	• Select Enable to block access to the URLs and
	keywords specified in the URL Blocking Table.
Keyword	Enter the keyword to block.
AddKeyword	Click it to add a keyword to the URL Blocking Table.
Delete	Select an entry in the URL Blocking Table and click it
	to delete the entry.

After finishing setting, click the Apply Changes button save the settings.

## 3.5.2.4 Anti-DoS

Denial-of-Service Attack (DoS attack) is a type of attack on a network that is designed to bring the network to its knees by flooding it with useless traffic.

Click Anti-DoS on the left pane, and the page shown in the following figure appears.



Figure 58 DoS setting

In this page, you are allowed to configure the Anti-DoS. You should enable the DoS prevention first, and then you are allowed to set the parameters in this page.

After finishing the settings, click **Apply Changes** to apply the settings in this page.

# 3.5.2.5 Software Forbidden Settings

Click **Software Forbidden** on the left pane, and the page shown in the following figure appears.

4	WX	Red	Line	Wireless P	eriphera		- Contraction of the second se	
Software Forbidden	Wizard	Stat	us	Network	Service	Advanced	Admin	Diagnostic
	DNS	Firewall	UPnP	IGMP Proxy	TR-069	ACL		
IP/Port Filter MAC Filter	Software Forbidden							
URL Filter Anti-DoS	This page to used to coming some somewales to be follower, by it. you can dely the to							
Software Forbidden	Current Forbidden Settware List							
	software select							
	Add Forbidden							
	201							

Figure 59 Software forbidden configuration

In this page, you can deny the IP packets from the specified software.

Select the proper software from the drop-down list and then click Add to add it to the

Current Forbidden Software List.

# 3.5.3 UPnP

Choose **Service** > **UPnP** and the page shown in the following figure appears. This page is used to configure UPnP. The system acts as a daemon after you enable it.



4	w≮	Red Line	Wireless F	Periphera			
UPnP	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	DNS	Firewall UPni	IGMP Proxy	TR-069	ACL		
UPnP	UPnP Configuration This page is used to configure UPaP. The system acts as a disensity when you enable UPaP.						
	UPnP: WAN Interface:		Disable 🦩 Enable				
	Apply Change:	s					

Figure 60 UPnP configuration

In this page, you can enable or disable the UPnP, and select a proper WAN interface for enabling the UPnP function.

After setting, click Apply Changes to save the settings.

# 3.5.4 IGMP Proxy

Choose **Service** > **IGMP Proxy** and the page shown in the following figure appears. IGMP proxy enables the system to issue IGMP host messages on behalf of hosts that the system discovered through standard IGMP interfaces. The system acts as a proxy for its hosts after you enable it.

4	NK.	Red Line	Wireless F	Peripheral	(s	× A	
IGMP Proxy	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	DNS	Firewall UPnP	IGMP Proxy	TR-069	ACL		
IGMP Proxy	IGMP Pro	Day Configuration         you enable it by doing the you enable it by doing the you enable it by doing the you enable it by with refrace (upst LAN) interface (upst LAN) interface (downstream)         ed:       C         interface (downstream)       R         ed:       C         interface (downstream)       R         ed:       C         interface (downstream)       R         enterval:       R         elay:       2000	tion Phost messages on behal follows: ream), which connects to a bisable <sup>C</sup> Enable (seconds) (*100ms)	If of hosts that the syst router running IGMP.	em discovered through standard	IGMP interfaces. The sys	tlem acts as a proxy

Figure 61 IGMP proxy configuration

#### The following table describes the parameters in this page.

Field	Description					
IGMP Proxy	Enable or disable the IGMP proxy function.					
Multicast Allowed	Enable or disable the Multicast Allowed.					
Robust Count	The robustness variable is a way of indicating how susceptible the subnet is to the lost packets. IGMP can recover from robustness variable minus 1 lost IGMP packets. The robustness variable should be set to a value of 2 or greater. The default robustness variable value is 2.					
Last Member Query Count	The last member query count is the number of Group-Specific Query messages sent before the router assumes that there are no members of the host group being queried on this interface. The default last member query count is 2.					
Query Interval	The query interval is the amount of time in seconds between IGMP General Query messages sent by the router (if the router is the querier on this subnet). The default query interval is 60 seconds.					
Query Response Interval	The query response interval is the maximum amount of time in seconds that the IGMP router waits to receive a response to a General Query message. The query response interval is the Maximum Response Time field in the IGMP v2 Host Membership Query message header. The default query response interval is 100 ms and must be less than the query interval.					
Group Leave Delay	Set the group leave interval.					

After setting, click **Apply Changes** to save the settings.

LWK

## 3.5.5 TR-069

Choose Service > TR-069 and the page shown in the following page appears.

DNS     Firstvall     UPn     IOMP Frozy     TE-069     ACL       TR-069 Configuration       The page is used to configure the TR-069 CPE. Here you may change the setting for the ACS's parameters.       ACS:       Email: 'F'       URL: 'P'       URL: 'P'       URL: 'P'       Private the TR-069 CPE. Here you may change the setting for the ACS's parameters.       ACS:       Email: 'P'       URL: 'P'       Partial: Colspan="2">Configure 'P'       Periadic Inform Enable: 'P'       Partial: Configure Tenable       Periadic Inform Enable: 'P'       Periadic Inform Enable: 'P'       Periadic Inform Enable: 'P'       Periadic Inform Enable: 'P'       Parti: 'P'       Parti: 'P'       Parti: 'P'       Parti: 'P'       Parti: 'P'       Parti: 'P'       Obsets' Colspan='P'       Parti: 'P'       Obsets' Colspan='P'       Colspan= 'P'       Parti: 'P'       Colspan='P'       Obsets' Colspande 'P' <td col<="" th=""><th>R-069 Configuration page is used to configure the TR-008 CFE. 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TR-069 Configuration         The page is used to configure the TR-069 CPE. Here you may change the setting for the ACS's parameters.         ACS:         Enable: <ul> <li>P</li> <li>Table Transmitter</li> <li>Transmitter</li> <l< td=""><td>page is used to configure the TR-BB OPE. Here you may change the setting for the ACS's parameters.  S:  ADD:  S:  ADD:  S:  ADD:  ADD: ADD:  ADD:  ADD:</td><td></td><td>DNS Firewall</td><td>UPnP</td><td>IGMP Proxy</td><td>TR-069</td><td>ACL</td><td></td><td></td></l<></ul>	page is used to configure the TR-BB OPE. Here you may change the setting for the ACS's parameters.  S:  ADD:  S:  ADD:  S:  ADD:  ADD: ADD:  ADD:  ADD:		DNS Firewall	UPnP	IGMP Proxy	TR-069	ACL			
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Enable:       P         UR:       http://10.20.20.20.20.500         User Hame:       http://20.20.20.20.500         Paravatic Inform Enable:       ODable ® Enable         Periodic Inform Information:       DDable ® Enable         Connection Request:       Connection Request:         User Hame:       inte         Paravatic Inform Information:       Totable ® Enable         Paravatic Inform       Forod         Paravatic Information:       Totable Period         Paravatic Inform Informatinteree       Paravatic Informatic I	able: t: prigr/20. 200. 200. 200. 200. 200. 200. 200.		This page is used to configu	re the TH-069 CPE. Her	e you may change the	setting for the AUSIS	parameters.			
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Pert:     T647       Debug:     ACS Catificates CPE:     "No "Yes       ANsw Message:     "Disble" Enable       CPE Seade GetRPC:     "Disble" Enable       Skip MEAcostine:     "Disble" Enable       Debug:     "Disble" Enable       Auto-Execution:     "Disble" Enable       Auto-Execution:     "Disble" Enable       Certificate     "Disble" Enable       Certificate     "Disble" Enable	nt T647  S Certificate CPE: C No 'Yes Withsage: C Disable C Enable E Sends GetPC: C Disable C Enable BMRefore: C Disable C Enable by: C D				-					
ACS Centificates CPE: <sup>©</sup> No <sup>©</sup> Ves Show Message: <sup>©</sup> Disable <sup>©</sup> Enable CPE Sende Ge6PC: <sup>©</sup> Disable <sup>©</sup> Enable Delay: <sup>©</sup> Disable <sup>©</sup> Enable Auto-Execution: <sup>©</sup> Disable <sup>©</sup> Enable Auto-Execution: <sup>©</sup> Disable <sup>©</sup> Enable Centificate Management CPE Centificate Management CPE Centificate Disable <sup>©</sup> Inset	S Cardificanse OPE: O No 'Ves ow Mensage: O Disable C Enable E Sends (cardPOC: O Disable C Enable p MPalvoet: O Disable C Enable ou Execution: O Disable C Enable ply: Reset Ifficans Regeneration: Apply: Terret wordd: O Disable D D Disable D Disable D D Disable D D D D D D D D D D D D D D D D D D D				-					
ACS Centificates CPE: <sup>©</sup> No <sup>©</sup> Ves Show Message: <sup>©</sup> Disable <sup>©</sup> Enable CPE Sende Ge6PC: <sup>©</sup> Disable <sup>©</sup> Enable Delay: <sup>©</sup> Disable <sup>©</sup> Enable Auto-Execution: <sup>©</sup> Disable <sup>©</sup> Enable Auto-Execution: <sup>©</sup> Disable <sup>©</sup> Enable Centificate Management CPE Centificate Management CPE Centificate Disable <sup>©</sup> Inset	S Cardificanse OPE: O No 'Ves ow Mensage: O Disable C Enable E Sends (cardPOC: O Disable C Enable p MPalvoet: O Disable C Enable ou Execution: O Disable C Enable ply: Reset Ifficans Regeneration: Apply: Terret wordd: O Disable D D Disable D Disable D D D D D D D D D D D D D D D D D D D									
Show Mensage: © Disable © Enable CPE Sonk GEMPC: © Disable © Enable Delay: © Disable © Enable Auto-Execution: © Disable © Enable Auto-Execution: © Disable © Enable Certificate Management CPE Certificate	www.texture.com/com/com/com/com/com/com/com/com/com/									
CPE Sends GetRPC: © Disable © Enable Skip MRehow: © Disable © Enable Delay: © Disable © Enable Auto: Execution: © Disable © Enable Auto: Execution: © Disable © Enable Centificate Management CPE Centificate States	E Sendi Galle C enable C enable MR4hovic C Enable C Enable May C Disable C Enable ply Reart fiftigene E Conflicte Disable Disable C Enable E Conflicte									
Ship MRehoot C Disable C Enable Delay: C Disable C Enable Auto-Execution: C Disable C Enable Apply Remet Centificate Management OPE Centificate Disable Disable Apply Repet	p MRelevet: <sup>o</sup> Disable ⊂ Enable  sy: <sup>o</sup> Disable ∩ Enable  sy: <sup>o</sup> Disable ∩ Enable  sy: <sup>o</sup> Reset  tificate  client:  client:  for Minicate									
Delay: Cosable Canable Anno-Execution: Cosable Canable Apply Reset Certificate Management CPE conflicate Conflicate CPE conflicate Conflicate CPE conflicate CPE conflicate CPE conflicate	Ny: Chable @ Enable No Execution: C Disable @ Enable ply: Teast  Infigement Econflicat  Econflicat  Infigement Econflicat  Infigement Econflicat  Infigement Econflicat  Infigement Infigem									
Auto-Execution: Clusable C Enable	to Execution: C Disable C Enable ply Reset  iffican nagement Execution: Apply Reset sword: Disable D =									
Certificate Management: CPE Certificate client Asoly Paget	ttilcato magement E cantilcate client Apply Beest wordt and an apply Beest									
Management: CPE Certificate client Apply Reset	nagement: Eventicate client <u>Apply Reset</u> sword:		Apply Reset							
CPE Certificate client Apply Reset	E Certificate client Apply Reset									
	ssword:			17 mil		• 1				
1 0000010.	E Certificate: Browse Upload Delete		Password:	Lient	Apply Kes	57				
CPE Certificate: Browse Upload Delete			CPE Certificate:		Browse Up1	oad Delete				

Figure 62 TR-069 configuration

This page is used to configure the TR-069 customer premises equipment (CPE). In this page, you can configure the parameters of auto-configuration server (ACS). The following table describes the parameters in this page.

Field	Description
ACS	
Enable	Enable or disable the auto-configuration server.
URL	The URL of the auto-configuration server.
User Name	The user name for logging in to the ACS.
Password	The password for logging in to the ACS.



Field	Description
Periodic Inform Enable	Select Enable to periodically connect to the ACS to
	check whether the configuration updates.
Periodic Inform Interval	Set the informing interval.
Connection Request	
User Name	The connection user name provided by TR-069 service.
Password	The connection password provided by TR-069 service.
Path	The path for the ACS connecting the router.
Port	The port for the ACS connecting the router.
Debug	
ACS Certificates CPE	Specify whether to check the ACS certification of the router.
Show Message	Select <b>Enable</b> to display ACS SOAP messages on the serial console.
CPE sends GetRPC	Select <b>Enable</b> , the router contacts the ACS to obtain configuration updates.
Skip MReboot	Specify whether to send an MReboot event code in the inform message.
Delay	Specify whether to start the TR-069 program after a short delay.
Auto-Execution	Specify whether to automatically start the TR-069 after the router is powered on.
Certificate Management	
CPE Certificate Password	The certificate password of the router
CPE Certificate	For uploading the CPE certificate.
CA Certificate	For uploading the CA certificate.

After setting, click **Apply** to save the settings.

## 3.5.6 ACL

Choose **Service** > **ACL** and the page shown in the following figure appears. In this page, you can permit the data packets from LAN or WAN to access the router. You can configure the IP address for Access Control List (ACL). If ACL is enabled, only the effective IP address in the ACL can access the router.

#### Note:

If you select **Enable** in ACL capability, ensure that your host IP address is in ACL list before it takes effect.

<u> </u>	CT T T T	Red Line	Wireless F	eripheral	as and the second se	Real Property of the second se	
ACL	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	DNS Firewa	ll UPnP	IGMP Proxy	TR-069	ACL		
ACL	ACL Configu Var can specify which Former stretch and the Using of such access of Using of such access of Using of such access of LAN ACL Switch: P Address: Sentice Alowed P Adj Beert Current ACL Table	enices are accessable see use of permit cett airway. ontrol can be helpful in se LAN <b>WAN</b> <b>C Enat</b>	in types of data packet ecuring or restricting the le	Gateway managment.			

Figure 63 ACL configuration

The following table describes the parameters in this page:

Field	Description
Direction Select	Select the router interface. You can select LAN or WAN.
LAN ACL Switch	Select it to enable or disable ACL function.
IP Address	Enter the IP address of the specified interface. Only the IP address that is in the same network segment with the IP address of the specified interface can access the router.



Field	Description
	You can choose the following services from LAN:
Services Allowed	Web, Teinet, FTP, TFTP, SNMP, or PING. You can
	also choose all the services.

After setting the parameters, click the **Add** button to add the new rule to the **Current ACL Table**.

## 3.6 Advance

In the navigation bar, click **Advanced**. The submenus of **Advanced** settings contain **Routing**, **NAT**, **Port Mapping**, **IP QoS**, **SNMP** and **Others**.

### 3.6.1 Routing

The submenus of Routing contain Static Route and RIP.

#### 3.6.1.1 Static Route

Click **Static Route** on the left pane, and the page shown in the following figure appears. This page is used to configure the routing information. You can add or delete IP routes.

<u>_</u>	<u></u>	Red Line V	Vireless I	Periphera	13		
Routing	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Routing	NAT Port Mapping	IP QoS	SNMP	Others		
Static Route RIP	-	Configuration	on. Here you can add	l/delete IP routes.			
	Enable: Destination:	य 	1				
	Subnet Mask: Next Hop: Metric:	1					
	Interface: Add Route	Update Delete Selected	Show Routes				
	Static Route Tab Select Stat		Aask NextHop	Metric	Rr		

Figure 64 Routing configuration

The following table describes the parameters and buttons in this page:



Field	Description
Enable	Select it to use the static IP routes.
Destination	Enter the IP address of the destination device.
Subnet Mask	Enter the subnet mask of the destination device.
Next Hop	Enter the IP address of the next hop in the IP route to the
	destination device.
Metric	The metric value of routing.
Interface	The interface for the specified route.
Add Route	Click this button to add the new static route to the table.
Update	Select an entry in the table to populate the configuration
	fields with that entry's values. Make any necessary
	changes to those values and click this button to save
	those changes.
Delete	Select an entry in the table and click this button to delete
Selected	the selected entry.
Show	Click this button to display the IP Route Table. You can
Routes	view a list of destination routes commonly accessed by
	your network.
Static Route	Display the configured route entries of static IP.
Table	

Click Show Routes to display the IP Route Table page.

# IP Route Table

This table shows a list of destination routes commonly accessed by your network.

Destination	Subnet Mask	NextHop	lface
192.168.1.1	255.255.255.255	*	e1

Refresh Close

Figure 65 IP route table

This table shows a list of destination routes commonly accessed by your network.



#### 3.6.1.2 RIP

Click **RIP** on the left pane, and the page shown in the following figure appears. If you are using this device as a RIP-enabled router to communicate with others using Routing Information Protocol (RIP), enable RIP. This page is used to select the interfaces on your devices that use RIP, and the version of the protocol used.

4	NXX	Re	d Line V	vireless f	Periphera		×,	
RIP	Wizard	St	atus	Network	Service	Advanced	Admin	Diagr
	Routing	NAT	Port Mapping	IP QoS	SNMP	Others		
Static Route		nfigurati		P-enabled router to co	mmunicate with other	s using the Routing Information F	Protocol	
		i il jou are aoing	, mo device do a m			s during the rooting monitoring	1010201.	
	RIP:	(° )	Off C On	Apply				
	Interface: Receive Ver		br0 •					
	Send Versio		RIP1 •					
		lete						
	Rip Config Li	ist:						
	Select	Interfa	ce Receiv	e Version Sen	d Version			

Figure 66 RIP configuration

The following table describes the parameters and buttons of this page:

Field	Description					
RIP	Select Enable, and then the router communicates					
	with other RIP-enabled devices.					
Interface	Choose the router interface that uses RIP.					
Receive Version	Choose the interface version that receives RIP					
	messages. You can choose RIP1, RIP2, or Both.					
	• Selecting <b>RIP1</b> indicates the router receives					
	RIP v1 messages.					
	• Selecting <b>RIP2</b> indicates the router receives					
	RIP v2 messages.					
	• Selecting <b>Both</b> indicates the router receives					
	RIP v1 and RIP v2 messages.					
Send Version	The working mode for sending RIP messages. You					
	can choose <b>RIP1</b> or <b>RIP2</b> .					
	• Selecting <b>RIP1</b> indicates the router broadcasts					
	RIP1 messages only.					



Field	Description
	• Selecting <b>RIP2</b> indicates the router multicasts
	RIP2 messages only.
Add	Click this button to add the RIP interface to the Rip
	Config List.
Delete	Select an entry in the Rip Config List and click this
	button to delete the entry.

#### 3.6.2 NAT

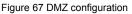
The submenus of NAT contain Setup DMZ, Virtual Server, NAT Forwarding, ALG, NAT Exclude IP, Port Trigger, FTP ALG Port, and NAT IP Mapping.

#### 3.6.2.1 Setup DMZ

Demilitarized zone (DMZ) is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains the services accessible to the Internet traffic, such as web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.

Click **Setup DMZ** on the left pane, and the page shown in the following figure appears.

4	$\overline{\mathbf{x}}$	Red Line	Wireless I	Periphera	La State	× z	
NAT	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Routing	NAT Port Mapp	ing IP QoS	SNMP	Others		
Setup DMZ	D##7						
Virtual Server	DMZ						
NAT Forwarding	A Demilitarized Z	one is used to provide Intern	iet services without sacrifi	ina			
ALG	unauthorized acc	ess to its local private netw le to Internet traffic, such as	ork. Typically, the DMZ ho	st contains			
NAT Exclude IP		mail) servers and DNS serv		F			
Port Trigger	Enable DM2						
FTP ALG Port	DMZ Host IP Add	-					
Nat IP Mapping							
	Apply Changes	Reset					



In this page, set the IP address of the PC to be DMZ host, so that the DMZ host will not be blocked by the firewall and the host can realize bidirectional limitless communication with the Internet users and servers.

The configuration steps are as follows:

- **Step 1** Select **Enable DMZ** to enable this function.
- Step 2 Enter an IP address of the DMZ host.

Step 3 Click Apply Changes to save the settings.

#### 3.6.2.2 Virtual Server

Firewall can prevent the unexpected stream on the Internet from your host on the LAN. The virtual server can create a channel that can pass through the firewall. In that case, the host on the Internet can communicate with a host on your LAN within certain port range.

Click **Virtual Server** on the left pane, and the page shown in the following figure appears.

4	MXX	Red L	ine Wireless	Periphera	us	× ×	
Virtual Server	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Routing	NAT Por	Mapping IP QoS	SNMP	Others		
Setup DMZ Virtual Server	Virtual S	erver					
NAT Forwarding ALG	This page allow Gateway.	you to config virtual s	erver,so others can access the s	erver through the			
NAT Exclude IP	Service Type:	dce Name:	UTH -				
Port Trigger		ed Service Name:					
FTP ALG Port Nat IP Mapping	Protocol:	Γ	CP 💌				
reat in mapping	WAN Setting:		interface <u>·</u>				
	WAN Interface WAN Port:		rppoel •	10)			
	LAN Open Por		13	,			
	LAN Ip Addres	e					
		Server Forwarding	fable: Iress Local Port WAN IP Add	ress WAN Port State	a Action		

Figure 68 Virtual server configuration

In this page, you can configure the virtual server. Other users on the Internet access the server through the router.

Field	Description
Service Type	You can choose Usual Service Name or
Service Type	User-defined Service Name.
Protocol	Select the transport layer protocol that the service
1100000	type uses. You can choose <b>TCP</b> or <b>UDP</b> .
WAN Setting	You can select Interface or IP Address.
WAN Interface	Select the router port that uses the virtual server.
WAN Port	Enter the access port on the WAN.
LAN Open Port	Enter the port number of the specified service type.
LAN IP Address	Enter the IP address of the virtual server.

The following table describes the parameters in this page.

After setting, click the Apply Changes button to save the settings.

#### 3.6.2.3 NAT Forwarding

Click **NAT Forwarding** on the left pane, and the page shown in the following figure appears. This page is used to configure the NAT forwarding rules.

4	w★	Red L	ine Wireless	Periphera	us S	×.	
NAT Forwarding	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Routing	NAT Por	t Mapping IP QoS	SNMP	Others		
Senip DMZ Virtual Server NAT Forwarding ALG NAT Exclude IP Port Trägger FTP ALG Port Nat IP Mapping	Entries in this wish to host so Local IP Add Remote IP A Enable: Apply Char Reset	ome sort of server like a Iress: Iddress: Iges Port Forwarding Table		k services to a specific private local network be	machine behind the NAT firewa	I. These settings are only II.	necessary if you

Figure 69 NAT forwarding configuration

Entries in the **Current NAT Port Forwarding Table** allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web

server or mail server on the private local network behind your Gateway's NAT firewall.

The following table describes the parameters in this page.

Field	Description
Local IP Address	Enter the local IP address.
Remote IP	Enter the remote IP address.
Address	
Enable	Enable or disable current rule.

After setting, click the **Apply Changes** button to save the settings.

### 3.6.2.4 NAT Exclude IP

Click **NAT Exclude IP** on the left pane, and the page shown in the following figure appears.

<u>_</u>	<u> シオベ</u>	Rei	d Line W	ireless I	Periphera			
NAT Exclude IP	Wizard	Sta	atus	Network	Service	Advanced	Admin	Diagnostic
	Routing	NAT	Port Mapping	IP QoS	SNMP	Others		
Setup DMZ Virtual Server NAT Forwarding ALG NAT Exclude IP Port Trigger FTP ALG Port Nat IP Mapping		ed to config son ternet through t	ne source ip address ha specified interface		e route mode			

Figure 70 NAT excluding IP configuration

In the page, you can configure some source IP addresses which need not to use NAT when accessing internet through the specified interface.

 Field
 Description

 Interface
 Select a WAN interface for setting the function of NAT excluding IP.

 IP Range
 Set the valid IP range for setting the function of NAT excluding IP.

The following table describes the parameters in this page.

After setting, click the Apply Changes button to save the settings.

#### 3.6.2.5 Port Triggering

Certain applications, such as WAN network games, video conferences, and network calls, require multiple connections. Because of the firewall setting, these applications cannot work on a simple NAT router. However, certain special applications enable the applications to work on a NAT router. When an application sends a connection request to a trigger port, the corresponding ports are open, for later connection and service provision.

Click **Port Trigger** on the left pane and the page shown in the following figure appears.

4	と 木	Red Line	Wireless F	Periphera		<u>A</u>	
Port Trigger	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Routing	NAT Port Mapping	j IP Q₀S	SNMP	Others		
Setup DMZ Virtual Server	Nat Port 1	Frigger					
NAT Forwarding ALG	Entries in this tab such filters can be	le are used to restrict certain t r helpful in securing or restricti	ypes of data packets fro ng your local network.	m your local network t	o Internet through the Gateway.	Use of	
NAT Exclude IP Port Trigger	Nat Port Trigger: Apply Changes	C Enable C Disable					
FTP ALG Port Nat IP Mapping	Application Type		Select One				
	C User-defined	Application Name: End Match PortTrigger Protoco UDP		Relate PortOpen Protoc	outgoing		
		UDP  UDP UDP UDP UDP UDP UDP		UDP • UDP • UDP •	outgoing 💌		
					outgoing 💌		
				UDP 👱	outgoing 💌		
	Apply Changes Current Port Trig	 ger Table:					
	ServerName	Trigger Protocol Direction	Match Port Open Pr	otocol Relate Port	Action		

Figure 71 NAT port triggering configuration

In this page, you may add or delete an entry of port triggering.

The following table describes the parameters in this page.

Field	Description				
Nat Port Trigger	Enable or disable the port triggering rule.				
Usual Application Name	Select a proper application in the drop-down list.				
User-defined Application Name	Manually define an application.				
	The start port number that the LAN user uses to				
SStart Match	trigger the open port.				
Port End Match	The end port number that the LAN user uses to trigger the open port.				
Port Trigger Protocol	Select the application protocol. You may select UDP, TCP, or. TCP/UDP.				
Port Start Relate	The start port number that is opened to WAN.				
Port End Relate	The end port number that is opened to WAN.				
Port Open Protocol	Select the proper protocol that is opened to WAN. You may select <b>UDP</b> , <b>TCP</b> , or. <b>TCP/UDP</b> .				
NAT Туре	You may outgoing or incoming.				

After setting, click the Apply Changes button to save the settings.

#### 3.6.2.6 FTP ALG Port

Click **FTP ALG Port** on the left pane and the page shown in the following figure appears.

4		Red Lin	e Wireless.	Periphera	<i>u</i> s	A State	
FTP ALG Port	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Routing	NAT Port Ma	ipping IP QoS	SNMP	Others		
Setup DMZ Virtual Server NAT Forwarding ALG NAT Exclude IP Port Trigger <u>FTP ALG Port</u> Nat IP Mapping		rts Delete Selected	ALG and FTP Client ALG po	rts .			

#### Figure 72 FTP ALG configuration

This page is used to configure FTP Server ALG and FTP Client ALG ports.

In this page, enter the port number for configuring as a FTP ALG port, and then click

the Add Dest Ports button to add a new entry to the FTP ALG Ports Table.

### 3.6.2.7 NAT IP Mapping

Click **Nat IP Mapping** on the left pane, and the page shown in the following figure appears.

4	WK.	Red Line	Wireless .	Periphera	ts .	A A	
Nat IP Mapping	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Routing	NAT Port Map	ping IP QoS	SNMP	Others		
Setup DMZ Virtual Server	NAT IP I	Mapping					
NAT Forwarding ALG NAT Exclude IP	from lan,so one	table allow you to config one I e packet which's source ip is address from pool for NAT.	P pool for specified source in range of the specified ac	e ip address Idress will			
Port Trigger	Type: One-to						
Nat IP Mapping Attention	Local End IP: Global Start I						
Config is modified(Click <mark>save</mark> to make it effective forever!	Global End IP Apply Chang						
	Current NAT IF Local Start IF Delete Selev		al Start IP Global End	IP Action			

Figure 73 NAT IP mapping

In this page, you can set the entries of NAT IP mapping.

The following table describes the parameters in this page.

Field	Description						
_	You may select one-to-one, many-to-one,						
Туре	many-to-many, or one-to-many.						
Local Start IP	Enter the local start IP.						
Local End IP	Enter the local end IP.						
Global Start IP	Enter the global start IP.						
Global End IP	Enter the global end IP.						

After setting, click the Apply Changes button to add an entry of NAT IP mapping.



## 3.6.3 Port Mapping

Choose **Advanced** > **Port Mapping**. The page shown in the following figure appears. In this page, you can bind the WAN interface and the LAN interface to the same group.



Figure 74 Port mapping configuration

In this page, you can bind the WAN interface and LAN interface to the same group. The procedure for operating a mapping group is as follows:

- **Step 1** Select **Enable** to enable this function.
- **Step 2** Select a group from the table at the bottom of the page.
- Step 3 Select the interfaces from the WAN and LAN interface lists and add them to the interface group list by using the Add button to manipulate the required mapping of the ports.
- Step 4 Click Apply to save the settings.



## 3.6.4 IP QoS

Choose **Advanced** > **IP QoS** and the page shown in the following figure appears. Entries in the **QoS Rule List** are used to assign the precedence for each incoming packet based on physical LAN port, TCP/UDP port number, source IP address, destination IP address and other information.

4	<u>w≮</u>	Re	d Line W	ireless P	eriphe	rats			
IP QoS	Wizard		Status	Network		Service	Advanced	Admin	Diagnostic
	Routing	NAT	Port Mapping	IP QoS	SNMP	Others			
IP OoS Attention Config is modified (Click) save in make it effective Screeer	based on spe Config Proced 1: Set traffic ru 2: Assign the p	cified policy. ure: le.	to assign the precede add marker for differe ČEnable		ing packet				

Figure 75 IP QoS configuration

By default, IP QoS is disabled.

Enable IP QoS, and then the following page appears.

4	NK.	Red Line W	ireless Pe	riphero				
IP QoS	Wizard	Status	Network		Service	Advanced	Admin	Diagnostic
	Routing	NAT Port Mapping	IP QoS	SNMP	Others			
Proof Attention Cody In model (Click Serve Jo make it officetoe Sweet)	IP QoS Entries in this tati based on specifi- config Freedure 2. Assign the pro- 2. Assign the pro- 0.05 Policy: Schedule Mode: Oct Rule List Surged External Pro- 0.05 Rule List	vie are used to assign the precede	nt stream. Behavior	Apply				

Figure 76 Enabling IP QoS

In this page, you can configure the QoS policy and schedule mode. Entries in the QoS rule list are used to assign the precedence for each incoming packet based on physical LAN port, TCP/UDP port number, and source/destination IP address/subnet masks.

Field	Description					
IP QoS	Enable or disable IP QoS.					
QoS Policy	You can choose <b>stream based</b> , <b>802.1p based</b> , or					
	DSCP based.					
Schedule Mode	You can choose strict prior or WFQ (4:3:2:1).					

The following table describes the parameters in this page.

Click the Add Rule button to display the following figure.

Add QoS Rule		
Source IP: 0.0.0.0	Source Mask:	255. 255. 255. 255
Destination IP:	Destination Mask:	
Source Port:	Destination Port:	
Protocol 🗾	Phy Port:	<b>•</b>
Set Priority: p3 (Lowest) 💌		
🗹 Insert or Modify QoS mark		
IP Precedence:	<b>•</b>	
IP ToS:	•	
802.1p:	-	
Add Rule		

Figure 77 Adding a QoS rule

The following table describes the parameters for adding a QoS rule.

Field	Description
Source IP	The IP address of the source data packet.
Source Mask	The subnet mask of the source IP address.
Destination IP	The IP address of the destination data packet.
Destination Mask	The subnet mask of the destination IP address.
Source Port	The port of the source data packet.



Field	Description
Destination Port	The port of the destination data packet.
Protocol	The protocol responds to the IP QoS rule. You can choose <b>TCP</b> , <b>UDP</b> , or <b>ICMP</b> .
Phy Port	The LAN interface responds to the IP QoS rule.
Set priority	The priority of the IP QoS rule. P0 is the highest priority and P3 is the lowest.
Insert or Modify QoS Mark	Enable or disable this function.
IP Precedence	You can choose from 0 to 7 to define the priority level in the ToS of the IP data packet.
IP ToS	The type of IP ToS for classifying the data package You can choose Normal Service, Minimize Cost, Maximize Reliability, Maximize Throughput, or Minimize Delay.
802.1p	You can choose from 0 to 7.

After setting, click the Add Rule button to add the QoS rule to the QoS Rule List.

## 3.6.5 SNMP

Choose Advanced > SNMP and the page shown in the following figure appears.

4	N¥K.	Red Line W	ireless Pe	ripherals				
SNMP	Wizard	Status	Network	Serv	ice	Advanced	Admin	Diagnostic
	Routing NA	T Port Mapping	IP QoS	SNMP	Others			
SNNP Attention fig is modified (Clici, save to make it effective forever!	This page is used to r	DCOI Configuration		he setting for system	description, tr	rap ip address, community nar	ne, etc	

Figure 78 SNMP configuration

In this page, you can configure the parameters of Simple Network Management Protocol (SNMP).By default, SNMP is disabled.

Select Enable SNMP, and then the following page appears.



4	<u> </u>	Red Line W	ireless Per	lipherals	X		
SNMP	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Routing NAT	Port Mapping	IP QoS	SNMP Others			
SHEP Attention Config (a modular (Cick) saw (a make a effective forward	This page is used to co The Enable Statem Description System Description System Contact System Name System Location Trap IP Address Community name Community name	COI Configuratio		s setting for system description, b	rap ip address, community ni	ame, etc	

#### Figure 79 Enabling SNMP

#### The following table describes the parameters in this page:

Field	Description
Enable SNMP	After enabling SNMP, you are allowed to set the following parameters.
System Description	Display the system description.
System Contact	Enter the system contact.
System Name	You can modify the system name if necessary.
System Location	Enter the system location.
Trap IP Address	Enter the IP address of trap host. The trap information is sent to the host.
Community name (Read-only)	The common character string that is used for reading the device information is like a password. The network administrator uses this password to read the information of this router.
Community name (Read-write)	The common character string that is used for configuring the device is like a password. The network administrator uses this password to configure the information of the router.

LINK

After setting, click **Apply Changes** to save the settings.

## 3.6.6 Others

Choose Advanced > Others and the page shown in the following figure appears.



Figure 80 Bridge setting

This page is used to configure the bridge parameters. In this page, you can change the settings or view some information in the bridge mode and its attached ports. The following table describes the parameters and button in this page:

Field	Description
Ageing Time	If the host is idle for 300 seconds (the default value),
	its entry is deleted from the bridge table.
802.1d Spanning	Disable or Enable 802.1d Spanning Tree Protocol
Tree	(STP). Select Enable to provide path redundancy
	while preventing undesirable loops in your network.
Show MACs	Click this button to show a list of the learned MAC
	addresses for the bridge.

Click **Show MACs** to display the following page.



Forwarding	Table			
J				
MAC Address	Port	Туре	Aging Time	1
01:80:c2:00:00:00	0	Static	300	
00:22:19:04:fe:26	1	Dynamic	300	
01:00:5e:00:00:09	0	Static	300	
00:e0:4c:56:78:60	0	Static	300	
		Static	300	



This table shows a list of learned MAC addresses for this bridge.

## 3.7 Admin

In the navigation bar, click Admin. The submenus of Admin page contain Commit/Reboot, Update, Log, Password, Time and. Logout.

## 3.7.1 Commit/Reboot

Choose **Admin > Commit/Reboot**, and the page shown in the following figure appears. You can set the router reset to the default settings or set the router to commit the current settings.

4	WK.	Re	d Line L	Vireless Po	eriphe	srats			
Admin	Wizard		Status	Network		Service	Advanced	Admin	Diagnostic
	Commit/Reboot	Update	Log	Password	Time	Logout			
Commit Reboot Attention Canfig is modified: Click <u>save</u> no make it effective forever!	This page is u Reboot from:	Save Current	t changes to system : Configuration Configuration alt Configuration	memory and reboot you	ır system wit	h different configuration	8.		

Figure 82 Saving or restoring the router settings

Field	Description					
Reboot from	<ul> <li>You can choose Save Current Configuration or Factory Default Configuration.</li> <li>Save Current Configuration: Save the current settings, and then reboot the router.</li> <li>Factory Default Configuration: Reset to the factory default settings, and then reboot the router.</li> </ul>					
Reboot	Click it to reboot the router.					

The following table describes the parameters and button of this page:

## 3.7.2 Update

Choose Admin > Update. The submenus of Update contain Upgrade Firmware and Backup/Restore.

#### 3.7.2.1 Upgrade Firmware

Click **Upgrade Firmware** on the left pane, and the page shown in the following figure appears. In this page, you can upgrade the firmware of the router.

4	WK.	Red L	ine Wireless.	Peripher	ats	- A A A A A A A A A A A A A A A A A A A	
Update	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Commit/Reboot	Update	Log Password	Time	Logout		
Upgrade Firmware Backup/Restore	This page allow Note:System w Select File:	e Firmware rs you upgrade the AD: ill reboot after file is up Reset	SL Fouter firmware to new version. loaded.		over off the device during the uplo	oad because it may crash	the system.

Figure 83 Upgrading firmware

In this page, you can upgrade the firmware of the router.

To upgrade the firmware, click **Browse...** to select the firmware file and then click **Upload** to begin upgrading the firmware.



## ▲ Caution:

Do not turn off the router or press the Reset button while the procedure is in progress. Otherwise, system may crash.

#### 3.7.2.2 Backup/Restore

Click **Backup/Restore** on the left pane, and the page shown in the following figure appears.

## ▲ Caution:

Do not turn off the router or press the Reset button while the procedure is in progress. Otherwise, system may crash.

	WK	Red Line	e Wireless I	Periphero	us State	<u> </u>	
Backup/Restore	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Commit/Reboot	Update Log	Password	Time	Logout		
Upgrade Firmware Backup:Restore		s to File:			your hard drive. You also have th	e option to load configurati	on settings.

Figure 84 Backuping or uploading settings

In this page, you can backup the current settings to a file and restore the previous settings.

To save the settings, click the **Save...** button and select the path, then you can save the configuration file of the router.

To upload the settings, click **Browse...** to select the configuration file, and then click **Upload** to upload the router configuration.



## Caution:

Do not turn off the router or press the Reset button while the procedure is in progress. Otherwise, system may crash.

## 3.7.3 System Log

Choose Admin > Log and the page shown in the following figure appears.

Log	Wizard	Status		twork	Service	Advanced	Ad	lmin Diagr
	Commit/Reboot	Update	Log	Password	Time	Logout		
Log	Log Set	ting						
	This page is us information beli	ed to display the sys ow.	tem event log table. E	By checking Error o	r Notice ( or both)v	vill set the log flag. By cl	icking the ">> ", it v	vill display the newest log
	Error:		Notice:					
	Apply Chang	es Reset						
	Event log Tab	le:						
	Save Log t	o File   Clean Lo	a Table					
		< >	>> New					

Figure 85 Log setting

In this page, you can view the log information. You can set the log flag to **Error** or **Notice** (or both). Click **Save Log to File** to save the log information to your PC. Click **Clear Log Table** to clear the log information in the table.

## 3.7.4 Password

Choose Admin > Password and the page shown in the following figure appears.



4	WXX	Red Line Wir	eless Perip	herals	X		
Password	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Commit/Reboot U	Update Log	Password Tin	1e Logout			
Password Attention Code ja osobiet (CC) very ja mate it offense forever)		Delete Bexet	veb server of ADSL Route Prinklege root user	r.Emply user name or pacawe	ord is not allowed.		

Figure 86 User account configuration

The following table describes the parameters in this page:

Field	Description
User Name	Set the user name for accessing the router.
Privilege	Choose the privilege for the account.
Old Password	Enter the old password
New Deserverd	Enter the password to which you want to
New Password	change the old password.
Confirm Password	Enter the new password again.

After setting, click Add to add a new entry to the User Account Table.

## Note:

By default, the user name and password are **admin** and **admin** respectively. The common user name and password are **user** and **user** respectively.

#### 3.7.5 Time

Choose **Admin** > **Time** and the page shown in the following figure appears. You can configure the system time manually or get the system time from the time server.



	Wizard		Status	Network	Se	rvice	Advanced	Admin	Diagnostic
Attending       System Time Configuration         The statistics where it is a statistic statistic statistic statistic statistics where it is a statistic statistex statistic statis	Commit/Reboot	Update	Log	Password	Time	Logout			
Digduight:     Luex3TTHE       4psby Change:     Reset       MTP Configuration:     State:       State:     Disable       Server1:     Server1:       Merced:     Every1:       Merced:     Every1:       Merced:     Every1:	This page is u		-		ol(NTP) server. Her	a you can chang	ge the settings or view so	me information on the system t	ime and NTP
NTP Configuration: Satus: "Disable "Enable Server: Server: Server: Interval: Entry[: hours Interval: [Strt] Gebly: Liveris, forgland	-			Day Hour 16 n	nin 45 sec				
State: <sup>OD</sup> Disable <sup>C</sup> Enable Server 2: Inferce: Emr/Const. Infe	Apply Chang	es Reset							
State: <sup>O</sup> Disable <sup>C</sup> Enable Server: 2:  Inferver: Every Tene Zene:  (SPT) Gebla, Liveria, Reverse, Regland	NTP Confid	uration:							
Server2: Meterola: Every[			able C Enable						
Intervat: Evryf haurs Time Zone: 1997) Guble, Laberte, Norecce, Ragland 💌	Server:								
Time Zone: (307) Gunbia, Liberia, Norecco, England	Server2:								
	Interval:								
GMT time: Thu Jan 1 2:16:45 1970									

Figure 87 System time configuration

If you want the router to automatically acquire the system time from the time server, you need to configure the following parameters in this page.

Field	Description
State	Enable or disable SNTP.
Server	Enter the IP address or the domain name of the
Server	primary server.
Server 2	Enter the IP address or the domain name of the
Server 2	secondly server.
Interval	Set the synchronization interval between the
Interval	router and time server.
Time Zone	Select the corresponding time zone where your
Time Zone	router locates.
GMT time	Display the GMT time.

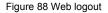
After setting, click **Get GMT Time** to make the router synchronize with the time server.

## 3.7.6 Logout

Choose Admin > Logout and the page shown in the following figure appears.



4	WK	Red	Line L	Nireless Pe	riphe	rats	X		
Logout	Wizard		Status	Network		Service	Advanced	Admin	Diagnostic
	Commit/Reboot	Update	Log	Password	Time	Logout			
Logout Attention Canfig is modified! Click save to	WEB Lo	ogout							
make it effective forever!	Logout								



In this page, click Logout to log out of the Web page of the ADSL router.

## 3.8 Diagnostic

In the navigation bar, click **Diagnostic**. The submenus of **Diagnostic** contain **Ping**, **Traceroute**, **OAM Loopback**, **ADSL Statistics**, and **Diag-Test**.

## 3.8.1 Ping Diagnosis

The ping diagnosis allows in simple ways to test a connection between 2 hosts in the same network or on different networks. If the command ping is successful, it means that there is a correct physical as well as a logical connection between 2 hosts in any network. (Unless if there is a firewall interfering somewhere in between.)

Choose **Diagnostic > Ping** and the page shown in the following figure appears.

<u>L1</u> ,	<u>بد</u>	Re	d Line W	/ireless P	eriphe	rats	X		
Ping	Wizard		Status	Network		Service	Advanced	Admin	Diagnostic
	Ping	Traceroute	OAM Loopback	ADSL Statistics	Diag Test				
Ping Attention Config is modified (Click save to	Ping Di	iagnostic							
make it effective forever!	Host:								
	PING								

Figure 89 Ping diagnosis

In this page, enter the IP address of the host, and then click **PING** to begin to Ping the host address.



## 3.8.2 Traceroute Diagnosis

Traceroute diagnosis is used to find out which path a packet takes to reach its destination. It is a nice way to see which routers it passes and which networks it crosses to reach its destination.

Choose **Diagnostic** > **Traceroute** on the left pane and the page shown in the following figure appears.

<u> </u>	<u></u>	Re	d Line V	Vireless P	eriphi	rats			
Traceroute	Wizard		Status	Network		Service	Advanced	Admin	Diagnostic
	Ping	Traceroute	OAM Loopback	ADSL Statistics	Diag-Test				
Traceroute Attention Cosfig is modified!Click <u>save</u> to make it effective forever!	Tracer	oute Diag							
make it she to be to be to be	Host:			NumberOfTries 3					
	Timeout :	5000 ms		Datasize : 38	Bytes				
	DSCP :	0		MaxHopCount: 30					
	Interface :	any 🔹							
	Traceroute	Show Result							

Figure 90 Traceroute diagnosis

In this page, you can set the parameters of Traceroute diagnosis.

The following table describes parameters in the	his page.
---	-----------

Field	Description
Host	Enter the IP address that performs the operation of tracing
	routing.
NumberOfTries	Set the number of times to repeat.
Timeout	Set the timeout interval.
Datasize	Se the data size.
DSCP	Set the DSCP value.
MaxHopCount	Set the maximum routing number.
Interface	Select the proper interface.

After finishing the settings, click the **Traceroute** button to start the traceroute diagnosis. Click the **Show Result** button to view the information of traceroute diagnosis.



## 3.8.3 OAM Loopback

Choose **Diagnostic** > **OAM Loopback**. The page shown in the following figure appears. In this page, you can use the VCC loopback function to check the connectivity of the VCC.

<u> </u>	<u>いた</u>	Red Line V	Vireless Perij	oherals			
OAM Loopback	Wizard	Status	Network	Service	Advanced	Admin	Diagnostic
	Ping Tracero	rte OAM Loopback	ADSL Statistics Diag	i Test			
OARL Leophack Alteriot Config r modified (Clore) save) in make it effective forwart		s supported by the use o	Connectivity Ver		ons. This page is used to perfor	m the VCC loopback function	to check the

Figure 91 OAM fault management

In this page, select the flow type first, then enter the VPI value and VCI value, finally click **Go!** to perform OAM loopback diagnosis.

### 3.8.4 ADSL Statistics

Choose **Diagnostic > ADSL Statistics** and the page shown in the following figure appears.



ADSL Statistics	Wizard	:	Status	Net	work	Service	Advar	nced	Admin	Diagnost	
	Ping	Traceroute	OAM Lo	opback ADS	L Statistics	Diag-Test					
ADDL Statetos Atendio adag se medificación a zur los maios e edenario fuerenti	Diagnostic ADSL										
	ADSL Tone Diagnostic										
	Start										
	Hlin Scale	Dov	Instream	Upstream							
	Loop Attenuation(d	IB)									
	Signal Attenuation(d										
	SNR Margin( Attainable Rate(Kbps)	1B)									
	Output Power(dBm)										
	Tone Number	H.Real	H.Image	SNR	QLN	Hlog					
	0										
	1										
	3										
	5										
	6 7										

Figure 92 ADSL diagnosis

This page is used to diagnose the ADSL tone. Click **Start** to begin ADSL tone diagnosis.

### 3.8.5 Diag-Test

Choose **Diagnostic** > **Diag-Test** and the page shown in the following figure appears. The ADSL Router is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "**Run Diagnostic Test**" button again to make sure the fail status is consistent.



Figure 93 Diagnostic test

Select an Internet connection, and then click Run Diagnostic Test to begin the test.