



802.11b/g/n wireless ADSL Router

Model No. DWA-N150Series



Ver.: 1.0.0

FCC STATEMENT



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

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

- 1) This device may not cause harmful interference.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

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

Note: This device must be more than 20cm away from human body when using.

CE Mark Warning



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

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1 Introduction

150M Wireless-N ADSL2+ & Broadband Router (iB-WRA150N2) is a router for high performance.

Enhanced Wireless transmission speed up to 150Mbps

Complies with IEEE 802.11 b/g/n wireless standards

Dual WAN Router

- ADSL Internet (xDSL): 1 - 10/100M (RJ11) WAN port
- Broaband Internet (Cable / DSL): 1 – 10/100M (RJ45) WAN Port

Wireless On/Off

- Allows users to turn off the wireless function not in use.

WPS (Wi-Fi Protected Setup)

- Automatically establishing WPA2 secure wireless connection

LEDs and Interfaces

IPv6 Ready

5dBi Omni Directional Antennas

Package List

The following contents should be found in the product packaging:

- 150M Wireless-N ADSL2+ & Broadband Router
- 5dBi Antenna (Fixed),
- Power Adapter
- Cd & Quick Installation Guide
- RJ45 Patch Cord x 1
- ADSL Splitter x 1 & RJ11 Patch cord x 2

Note:

Make sure that the package contains the above items. If any of the listed items are damaged or missing, please contact with your nearest dealer

Safety Precautions

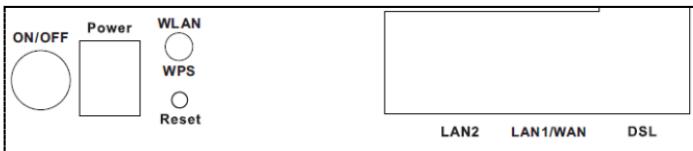
Follow the following instructions to prevent the device from risks and damage caused by fire or electric power:

- Use the power adapter in the package.
- 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 should be left to avoid damage caused by overheating to the device. Do not cover the holes on the device which are designed for heat dissipation.
- Do not put this device close to heat sources or high temperature place.
- Do not expose the device to direct sunshine.
- Do not put this device close to an over damp place.

LED

LEDs	Color	Status	Description
Power	Red	On	The device is initializing.
DSL	Green	On	The DSL line is established.
		Blinking	The DSL Line is training.
		Off	No DSL signal.
		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	Green	Blinking	Internet data is being transmitted in the routing mode.
		Off	The device is in the bridge mode.
		Red	On
		On	The device is initializing.
LAN1/2, LAN1/WAN	Green	On	The connection is normal and activated.
		Blinking	Data is being transmitted in the Broadband WAN.
		Off	The interface is not connected.
Wireless	Blue	On	Wireless connection has been activated.
		Blinking	Wireless data is being transmitted.
		Off	The Wireless connection is not activated.
WPS	Green	On	Connection succeeds under Wi-Fi Protected Setup.
		Blinking	WPS is enabled and the device is waiting for client to negotiate.
		Off	WPS is disabled.

Rear Panel



The following table describes the interfaces and buttons of the device:

Interface	Description
ON/OFF	Power switch, power on or power off the device.
Power	Power interface, for connecting to the power adapter.
Wireless / WPS	<ul style="list-style-type: none">Press the button and hold it for 1 second to 5 seconds, to enable Wireless.Press the button and hold it for more than 5 seconds, to enable WPS function.
Reset	Reset to the factory default configuration. Keep the device powered on, and insert a needle into the hole for 3 seconds, then release it. The device is reset to the factory default configuration.
LAN1/2	RJ-45 interface, for connecting to the Ethernet interface of a PC or the Ethernet device through Ethernet cable.
LAN1/WAN	This Ethernet RJ-45 interface has two functions. <ul style="list-style-type: none">Worked as a WAN interface that connects to the WAN for Broadband connection.Worked as a LAN interface that connects to the LAN port of the computer.
ADSL	RJ-11 interface, for connecting to the DSL interface or a splitter through a telephone cable for connection.

2 Features

- Complies with IEE802.3 & IEEE802.3u standards
- Complies with IEEE 802.11b/g/n standards
- **3-in-1:** 2-10/100M Auto-Negotiation (RJ45) Ethernet ports & 1-RJ11 (Internet) LINE port supporting Auto MDI/MDIX and Wireless-N Access Point
- Latest standards with downstream data rates up to 24Mbps, upstream data rates up to 3.5Mbps (With Annex M enabled).
- Provides WPA/WPA2, WPA-PSK/WPA2-PSK authentication, TKIP/AES encryption security
- Multi-SSID Security
- AP Isolation and wireless schedule
- IPv6 Ready
- Wi-Fi Button - Allows users to turn off the
- Wireless MAC filtering & DHCP Server
- Built-in firewall, supporting IP/MAC filter, Application filter and URL filter.
- Virtual Server, DMZ host and IP Address Mapping.
- Dynamic DNS, UPnP and Static Routing.
- With SNMP & DHCP server.
- 5-dBi Omni-Directional Antenna type.

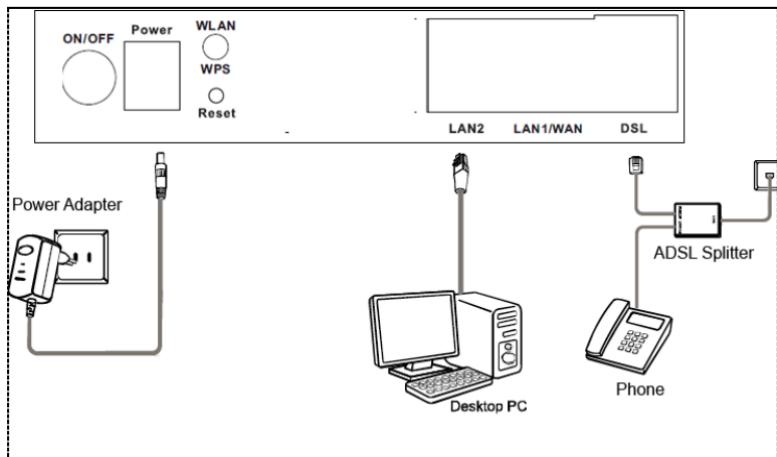
3 Hardware Connection

3.1 ADSL Connection

Method-I : Plug one end of the twisted-pair ADSL cable into the LINE port on the rear panel of iB-WRA150N2, and insert the other end into the wall socket.

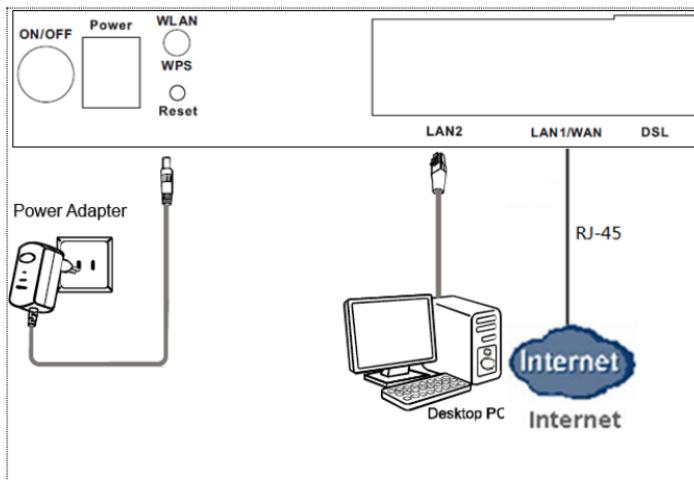
Method-II: You can use a ADSL splitter. External splitter can divide the data and voice, and then you can access the Internet and make calls at the same time. The external splitter has three ports:

- 1) Connect the Ethernet cable. Attach one end of a network cable to your computer's LAN port or a regular hub/switch port, and the other end to the LAN port on the iB-WRA150N2. (If you have the wireless NIC and want to use wireless connector, you can skip the connection of LAN port.)
- 2) Power on the computers and LAN devices.
- 3) Configure the ADSL connection in the router as per your ISP settings available from your ISP.



3.2 Broadband Connection

- 1) Connect the LAN Port of the Router to your PC with RJ45 Ethernet cable.
- 2) Connect the ISP RJ45 LAN Cable (Internet Link) to **LAN1/WAN** Port of the Router
- 3) Connect the power adapter to **Power** interface of the device.



4 Router Configuration

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

TCP / IP Network Setting

- Step 1** Choose Start > Control Panel > Network and Internet > Network and Sharing Center
- Step 2** Choose Change Adapter Settings > Local Area Connection. Right-click Local Area Connection, and choose Properties.
- Step 3** Double-click Internet Protocol Version 4 (TCP/IPv4).

Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**, and then click **OK**.

If you select **Use the following IP address**, set IP address of the PC as 192.168.1.X (2~254)

subnet mask as 255.255.255.0, and enter DNS server provided by your ISP.

4.1 Installation Guide

You can configure the router either with Web GUI menu or Easy Setup Wizard Utility

Method – I

Configuring the Router via Easy Setup Wizard (Resource CD)

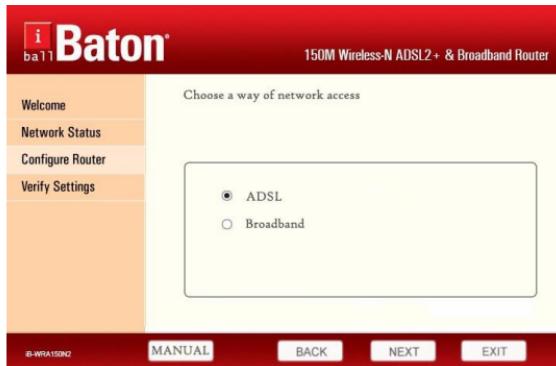
The Easy Setup Wizard will automatically pop up on the computer's screen.



Click on **Start** to start the Easy Setup Wizard.



Select Internet connection type **ADSL** or **Broadband** as your ISP connection and click **Next**



Select the proper Connection type & provide the details of user name and password as provided from our ISP.

cL

5 Method – II

Web Based GUI Configuring

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.

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



5.1 Status

5.1.1 Device Information

If you log in as a super user, the **ADSL Router Status** page shown in the following figure appears. In this page, you can view the following information: system, ADSL Status, TR-069 status, LAN configuration, DNS status, ADSL WAN Interfaces, ADSL WAN IPv6 configuration, Broadband WAN Interfaces, and Broadband WAN IPV6 Status.

In this page, click **connect button** to connect to Internet. If there is no preset WAN interface, refer **4.5.1 WAN** to do corresponding configuration.

iBall Baton® 150M Wireless-N ADSL2+ & Broadband Router IB-WRA150N2

Status | Quick Start | Network Setup | Advanced Settings | Access Management | Security Settings | Maintenance |

ADSL Router Status

This menu shows the current status and some basic settings of the device.

Status Info

> Device Info
> ADSL Info

Statistics

System

Product Name	IB-WRA150N2
Uptime	0 0:1:24
Date/Time	Sun Jan 1 5:31:24 2012
Firmware Version	IB-WRA150N2_1.0.0
Built Date	Oct 24 2014 15:41:48
Serial Number	00:1E:A6:12:45:65

ADSL Status

Operational Status	--
Upstream Speed	--
Downstream Speed	--

Figure 1 Status – 1

TR069 Status

Inform Status	No Inform Send(TR069 connection is not available)
Connecion Request Status	No connection request

LAN Configuration

IP Address	192.168.1.4
Subnet Mask	255.255.255.0
IPV6 Address	fe80::21fa:4fffe93:d78d
DHCP Server	Enable
MAC Address	00:1E:A6:12:45:65

DNS Status

DNS Mode	Auto
DNS Servers	
IPv6 DNS Mode	Auto

Figure 2 Status - 2

ADSL WAN Interfaces								
Interface	VPI/VCI	Encap	AppMode	Droute	Protocol	IP Address	Gateway	Status
pppoe1	0/35	LLC	INTERNET	On	PPPoE	0.0.0.0	0.0.0.0	Down 0 0:0:0 / 0 0:0:0 Connect
WAN1	8/77	LLC	TR069	Off	IPoE	0.0.0.0	0.0.0.0	Down

ADSL WAN IPv6 Configuration								
Interface	VPI/VCI	Encap	AppMode	Protocol	IPv6 Address	Prefix	Gateway	Status
pppoe1	0/35	LLC	INTERNET	PPPoE				Down
WAN1	8/77	LLC	TR069	IPoE				Down

Broadband WAN Interfaces								
Interface	AppMode	Droute	Protocol	IP Address	Gateway		Status	

Broadband WAN IPv6 Status								
Interface	AppMode	Protocol	IPv6 Address	Prefix	Gateway	Droute	Status	

[Refresh](#)

Figure 3 Status – 3

5.1.2 ADSL Info.

Choose **Status > Status info > ADSL Info** and the following page appears. In this page, you can view information of ADSL configuration.

ADSL Configuration

This menu shows the setting of the ADSL Router.

Adsl Line Status	ACTIVATING.
Adsl Mode	--
Up Stream	--
Down Stream	--
Attenuation Down Stream	--
Attenuation Up Stream	--
SNR Margin Down Stream	--
SNR Margin Up Stream	--
Vendor ID	iBall Baton
Firmware Version	4926dc02
CRC Errors	--
Up Stream BER	--
Down Stream BER	--
Up Output Power	--
Down Output Power	--
Down Stream ES	--
Up Stream ES	--
Down Stream SES	--
Up Stream SES	--
Down Stream UAS	--
Up Stream UAS	--

Adsl Retrain: [Retrain](#) [Refresh](#)

5.1.3 Statistics

Choose **Status > Statistics > Statistics** and the following page appears. In this page, you can view statistics information.

Statistics

This menu shows the packet statistics for transmission and reception regarding to network interface.

Statistics:						
Interface	Rx pkt	Rx err	Rx drop	Tx pkt	Tx err	Tx drop
lan1	0	0	0	0	0	0
lan2	0	0	0	0	0	0
lan3	6967	0	0	3001	0	0
lan4	0	0	0	0	0	0
pppoe1	0	0	0	0	0	0
WAN1	0	0	0	0	0	0
w1	151132	0	0	1872	0	23868
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
w6	0	0	0	0	0	0
w7	0	0	0	0	0	0
w8	0	0	0	0	0	0
w9	0	0	0	0	0	0
w10	0	0	0	0	0	0
w11	0	0	0	0	0	0
w12	0	0	0	0	0	0
w13	0	0	0	0	0	0

Refresh

5.2 Quick Start

The **Quick start** page guides fast and accurate configuration of the Internet connection and other important parameters. In the navigation bar, click **Quick Start**. The page as shown in the following figure appears.

Step 1 WAN connection setting

In following page, enter VPI and VCI provided by your Internet service provider (ISP). In this example, select **PPPoE** as connection mode. And then enter PPP username and password provided by your Internet service provider (ISP).

Quick Wizard

The Quick Start will guide you to configure the router step by step.

Step 1: WAN Settings

Step 2: Wireless Settings

Step 3: Save Setting

Step 1: WAN Settings:

Please select the wan connection mode

VPI/VCI: (0-255) VCI: (32-65535)

Encapsulation: LLC/SNAP VC-Mux
 Bridge
 PPPoE

Connection Mode: IPoE
 PPPoA
 1483 Routed

IP Protocol:

VLAN (802.1q) Enable Disable

VLAN ID(1-4095):

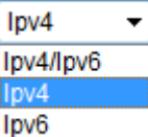
PPP Settings: Username: Password:

Default Route: Enable Disable

DNS Settings: Set DNS Automatically
 Set DNS Manually :

Next

The following table describes the parameters in this page:

Field	Description
VPI	Virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is in the range of 0 to 255. Enter the correct VPI provided by your ISP.
VCI	Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is in the range of 32 to 65535. (0 to 31 is reserved for local management of ATM traffic) Enter the correct VCI provided by your ISP.
Encapsulation	You can select LLC/SNAP or VC-Mux . In this example, the encapsulation mode is set to LLC/SNAP .
Connection Mode	There are five WAN connection types: PPPoA , PPPoE , IPoE , 1483 Routed , and Bridge . <ul style="list-style-type: none">● PPPoE/PPPoA: Need to enter PPP username and password provided by your ISP.● IPoE/1483 Routed: You can select Attain IP Automatically or IP Manually.● Bridge: You need to dial-up on PC to connect to the Internet.
IP Protocol	You can select it from drop-down list: 
Default Route	Enable or disable it.
DNS Settings	You can select Set DNS Automatically or Set DNS Manually . If you select Set DNS Manually , enter DNS server provided by your ISP.

For other entries which are not mentioned above, you can keep them as defaults.

Step 2 Wireless Quick settings

In following page, you can select wireless band, set SSID and encryption. For wireless security, it is recommended to set the encryption mode to WPA2, and then enter a password.

Fast Config

Step 2:Wireless Quick Settings: Configure Basic Wireless Settings.

Wireless:	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Wireless Mode:	Automatic (802.11bgn) <input type="button" value="▼"/>
SSID:	iBall-Baton <input type="text"/>
Encryption:	WPA2(AES) <input type="button" value="▼"/>
Wireless Security Mode:	<input type="radio"/> Enterprise (RADIUS) <input checked="" type="radio"/> Personal (Pre-Shared Key)
Pre-Shared Key Format:	Passphrase <input type="button" value="▼"/>
Pre-Shared Key:	12345678 <input type="text"/>

Back **Next**

Step 3 Save settings

If you want to finish setting, click **Save**. Otherwise click **Cancel**.

Step 3:Save Settings Confirm the below settings and click "Save" button, if you want to change any settings click on "Back" else click "Cancel" to ignore settings.

Settings as follow:

VPI:	0
VCI:	35
Encapsulation:	LLC/SNAP
Channel Mode:	PPPoE
IP Protocol:	Ipv4/Ipv6
ppp username:	s
ppp password:	s
DNS Setting:	DNS Automatically
Ipv6 Address Mode:	SlAAC
DHCPv6 Mode:	AUTO
IPv6 DNS Setting:	DNS Automatically
Wireless Mode :	Enable

Back **Save** **Cancel**

5.3 Network Setup

5.3.1 WAN

Choose **Network Setup > WAN**. The **WAN** page that is displayed contains **WAN**, **3G**, **Auto PVC**, **ATM**, and **ADSL**.

WAN

Choose **Network Setup > WAN > WAN**, the page shown in the following figure appears. In this page, you can add or configure WAN interface of your router.

WAN Configuration
This page is used to configure the parameters for the WAN interface of your ADSL and/or Ethernet Modem/Router. Note : When connect type of PPPoE and PPPoA only is "Manual", the "Connect" and "Disconnect" button will be enable.

WAN Connection Type:	<input checked="" type="radio"/> ADSL	<input type="radio"/> Broadband												
Default Route Selection:	<input checked="" type="radio"/> Auto	<input type="radio"/> Specified												
VPI:	0	VCI: 35												
Encapsulation:	<input checked="" type="radio"/> LLC	<input type="radio"/> VC-MUX												
Channel Mode:	PPPoE	Enable NAPT: <input checked="" type="checkbox"/>												
Enable IGMP:	<input type="checkbox"/>													
IP Protocol:	IPv4/IPv6													
Application Mode:	INTERNET													
PPP Settings:														
User Name:	Password:													
Connection Mode:	Always on	Idle Time (min):												
Connection Type:														
IP Settings:	<input checked="" type="radio"/> Static IP	<input type="radio"/> Dynamic IP												
WAN IP Address:	Gateway:													
Subnet Mask:														
Default Route:	<input type="radio"/> Disable	<input type="radio"/> Enable												
Unnumbered:	<input type="checkbox"/>													
IPv6 WAN Setting:														
Address Mode:	Slaac													
DHCPv6 Mode:	Auto													
Request DHCPv6 PD:	<input checked="" type="checkbox"/>													
WAN														
Connect	Disconnect	Add	Modify	Delete	Undo	Refresh								
WAN Interfaces Table:														
Select	Inf	Mode	VPI	VCI	Encap	NAPT	IGMP	DRoute	IP Addr	Remote IP	NetMask	User Name	Status	Edit
<input type="radio"/>	pppoe 1	PPPoE	0	35	LLC	On	Off	On	0.0.0.0	0.0.0.0	255.255.255.255	aa	Down	 
<input type="radio"/>	WAN1	IPv4	8	77	LLC	Off	Off	Off	0.0.0.0	0.0.0.0	0.0.0.0	---	Down	 

The following table describes the parameters of this page:

Field	Description
WAN Physical Type	You can select ADSL WAN or Ethernet WAN .
Default Route Selection	You can select Auto or Specified .
VPI	The virtual path between two points in an ATM network, ranging from 0 to 255.
VCI	The virtual channel between two points in an ATM network, ranging from 32 to 65535 (1 to 31 are reserved for known protocols)
Encapsulation	You can choose LLC and VC-Mux .
Channel Mode	You can choose 1483 Bridged , 1483 MER , PPPoE , PPPoA , 1483 Routed or IPoA .
Enable NAPT	Select it to enable Network Address Port Translation (NAPT) function. When it is unselected, to access the Internet normally, you must add a route on the uplink equipment. Otherwise, the access to the Internet will fail. Usually it is enabled.
Enable IGMP	You can enable or disable Internet Group Management Protocol (IGMP) function.
PPP Settings	
User Name	For PPP dial-up, enter the user name provided by your ISP.
Password	For PPP dial-up, enter the password provided by your ISP.
Type	You can choose Continuous , Connect on Demand , or Manual .
Idle Time (min)	If Connect on Demand is set, you need to enter the idle timeout time. Within the preset minutes, if the router does not detect the flow of the user continuously, it will automatically disconnect the PPPoE connection.
WAN IP Settings	
Type	You can choose Fixed IP or DHCP .

Field	Description
	<ul style="list-style-type: none"> When Fixed IP is selected, you should enter the local IP address, remote IP address and subnet mask. When DHCP is selected, the router is a DHCP client and the WAN IP address is assigned by the remote DHCP server.
Local IP Address	Enter the IP address of WAN interface provided by your ISP.
Netmask	Enter the subnet mask of the local IP address.
Unnumbered	Select this checkbox to enable IP unnumbered function.
Add	After configuring the parameters of this page, click it to add a new PVC into the Current ATM VC Table .
Modify	Select a PVC from the Current ATM VC Table , then modify the parameters of this PVC. After setting, click it to apply the settings of this PVC.
	Click it, the PPP Interface-Modify appears. You can modify the PVCs' parameters.

Click  in the **PPPoE** mode, the page shown in the following figure appears. In this page, you can configure parameters of this PPPoE PVC.

PPP Interface - Modify

Protocol:	PPPoE
ATM VCC:	0/35
Login Name:	<input type="text" value="aa"/>
Password:	<input type="text" value="...."/>
Authentication Method:	<input type="button" value="AUTO"/>
Connection Type:	<input type="button" value="Continuous"/>
Idle Time (s):	<input type="text" value="0"/>
Bridge:	<input type="radio"/> Bridged Ethernet (Transparent Bridging) <input type="radio"/> Bridged PPPoE (implies Bridged Ethernet) <input checked="" type="radio"/> Disable Bridge
AC-Name:	<input type="text"/>
Service-Name:	<input type="text"/>
802.1Q:	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
VLAN ID(1-4095):	<input type="text" value="0"/>
MTU (1-1500):	<input type="text" value="1492"/>
Static:	<input type="text"/>
Source Mac address:	<input type="text" value="00:1E:A6:12:B4:56"/> (ex.00:E0:86:71:05:02) <input type="button" value="MACCLONE"/>
<input type="button" value="Apply Changes"/> <input type="button" value="Return"/> <input type="button" value="Undo"/>	

Figure 4

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

Field	Description
Protocol	It displays the protocol type used for this WAN connection.
ATM VCC	The ATM virtual circuit connection assigned for this PPP interface (VPI/VCI).
Login Name	The user name provided by your ISP.
Password	The password provided by your ISP.
Authentication	You can choose AUTO , CHAP , or PAP .

Field	Description
Method	
Connection Type	You can choose Continuous , Connect on Demand , or Manual .
Idle Time (s)	If choose Connect on Demand , you need to enter the idle timeout time. Within the preset minutes, if the router does not detect the flow of the user continuously, the router automatically disconnects the PPPoE connection.
Bridge	You can select Bridged Ethernet , Bridged PPPoE , or Disable Bridge .
AC-Name	The accessed equipment type.
Service-Name	The service name.
VLAN	You can select Disable or Enable . After enable it, you need to enter the VLAN ID. The value ranges from 1 to 4095.
MTU	Maximum Transmission Unit. Sometimes you must modify this function to access network successfully.
Static	If this function is disabled, the modem obtains an IP address assigned by an uplink equipment such as BAS, through PPPoE dial-up. If this function is enabled, the modem uses this IP address as the WAN IP address.
Source Mac address	The MAC address you want to clone.
MACCLONE	Click it to enable the MAC Clone function with the MAC address that is configured.

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

Auto PVC

Choose **Network Setup > WAN > Auto PVC**, the page shown in the following figure appears. This page is used to configure PVC auto detect function, you can add or delete auto-pvc.

Auto PVC Configuration

This menu is used to configure pvc auto detect function. Here you can add/delete auto pvc search table.

Auto-Detect WAN PVC		Auto Detect
VPI: <input type="text"/>		VCI: <input type="text"/>
Current Auto-PVC Table:		
PVC	VPI	VCI
0	0	35
1	0	32
2	1	32
3	0	33
4	8	35
5	0	100
6	0	38
7	8	43

ATM Settings

Choose **Network Setup > WAN > ATM**, the page shown in the following figure appears. In this page, you can configure the parameters of the ATM, including QoS, PCR, CDVT, SCR, and MBS.

ATM Settings

This menu 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.

VPI: <input type="text"/>	VCI: <input type="text"/>	QoS: <input type="text"/> UBR					
PCR: <input type="text"/>	CDVT: <input type="text"/>	SCR: <input type="text"/>	MBS: <input type="text"/>				
Adsl Retrain: <input type="button" value="Apply Changes"/> <input type="button" value="Undo"/>							
Current ATM VC Table:							
Select	VPI	VCI	QoS	PCR	CDVT	SCR	MBS
<input type="radio"/>	0	35	UBR	6144	0	---	---
<input type="radio"/>	8	77	UBR	6144	0	---	---

Figure 5

The following table describes the parameters of this page:

Field	Description
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 , rt-VBR , or nrt-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	Sustain 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.

ADSL Settings

Choose **Network Setup > WAN > ADSL**, the page shown in the following figure appears. In this page, you can select the DSL modulation. Mostly, you need to remain this factory default settings. The router negotiates the modulation modes with the DSLAM.

ADSL Settings
This menu allows you to choose which ADSL modulation settings your modem router will support.

ADSL modulation:	<input checked="" type="checkbox"/> G.Lite <input checked="" type="checkbox"/> G.Dmt <input checked="" type="checkbox"/> T1.413 <input checked="" type="checkbox"/> ADSL2 <input checked="" type="checkbox"/> ADSL2+
AnnexL Option:	<input checked="" type="checkbox"/> Enabled
AnnexM Option:	<input checked="" type="checkbox"/> Enabled <input checked="" type="checkbox"/> Bitswap Enable <input checked="" type="checkbox"/> SRA Enable

Apply Changes

5.3.2 LAN

Choose **Network Setup > LAN**. The **LAN** page that is displayed contains **LAN**, **DHCP**, **DHCP Static**, and **LAN IPv6**.

IP Address

Choose **Network Setup > LAN > LAN**, 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.

LAN Setup
This menu is used to configure the LAN interface of your Router. Here you may change the setting for IP address, subnet mask, etc...

Interface Name:	Ethernet1
IP Address:	192.168.1.1
Subnet Mask:	255.255.255.0
<input type="checkbox"/> Secondary IP	
IGMP Snooping:	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Apply Changes	
MAC Address Control:	<input type="checkbox"/> LAN1 <input type="checkbox"/> LAN2 <input type="checkbox"/> LAN3 <input type="checkbox"/> LAN4 <input type="checkbox"/> WLAN
Apply Changes	
New MAC Address:	<input type="text"/> Add
Current Allowed MAC Address Table:	
MAC Addr	Action

The following table describes the parameters of this page:

Field	Description
IP Address	Enter the IP address of LAN interface. It is recommended to enter an address ranged from 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 it to enable the secondary LAN IP address. The two LAN IP addresses must be in the different network segment.

Field	Description
IGMP Snooping	IGMP snooping enables the router to forward multicast traffic intelligently, instead of flooding all ports in the VLAN. With IGMP snooping, the router listens to IGMP membership reports, queries and leave messages to identify the switch ports that are members of multicast groups. Only identified Multicast traffic will be forwarded to ports.
MAC Address Control	It is the access control based on MAC address. The designated LAN port, only for the Current Allowed MAC Address to access.
New MAC Address	Enter MAC address, and then click Add to add a new MAC address.

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.

Choose **Network Setup > LAN > DHCP**, the page shown in the following figure appears.

DHCP Mode

This menu can be used to config the DHCP mode None,DHCP Relay or DHCP Server.

(1)Enable the DHCP Server if you are using this device as a DHCP server. This page lists the IP address pools available to host on your LAN. The device distributes numbers in the pool to host on your network as they request Internet access.

(2)Enable the DHCP Relay if you are using the other DHCP server to assign IP address to your host on the LAN. You can set the DHCP server IP address.

(3)If you choose "None", then the modem will do nothing when the host request a IP address.

LAN IP Address: 192.168.1.1	Subnet Mask: 255.255.255.0														
DHCP Mode: <input type="button" value="DHCP Server"/>															
<table border="1"><tr><td>Interface:</td><td><input checked="" type="checkbox"/> LAN1 <input type="checkbox"/> LAN2 <input checked="" type="checkbox"/> LAN3 <input checked="" type="checkbox"/> LAN4 <input type="checkbox"/> WLAN <input checked="" type="checkbox"/> VAP0 <input checked="" type="checkbox"/> VAP1 <input type="checkbox"/> VAP2</td></tr><tr><td>IP Pool Range:</td><td>192.168.1. <input type="text" value="100"/> - 192.168.1. <input type="text" value="200"/> <input type="button" value="Show Client"/></td></tr><tr><td>Subnet Mask:</td><td><input type="text" value="255.255.255.0"/></td></tr><tr><td>Default Gateway:</td><td><input type="text" value="192.168.1.1"/></td></tr><tr><td>Max Lease Time:</td><td><input type="text" value="1440"/> minutes</td></tr><tr><td>Domain Name:</td><td><input type="text" value="iballbaton.co.in"/></td></tr><tr><td>DNS Servers:</td><td><input type="text" value="192.168.1.1"/> <input type="text"/> <input type="text"/></td></tr></table>		Interface:	<input checked="" type="checkbox"/> LAN1 <input type="checkbox"/> LAN2 <input checked="" type="checkbox"/> LAN3 <input checked="" type="checkbox"/> LAN4 <input type="checkbox"/> WLAN <input checked="" type="checkbox"/> VAP0 <input checked="" type="checkbox"/> VAP1 <input type="checkbox"/> VAP2	IP Pool Range:	192.168.1. <input type="text" value="100"/> - 192.168.1. <input type="text" value="200"/> <input type="button" value="Show Client"/>	Subnet Mask:	<input type="text" value="255.255.255.0"/>	Default Gateway:	<input type="text" value="192.168.1.1"/>	Max Lease Time:	<input type="text" value="1440"/> minutes	Domain Name:	<input type="text" value="iballbaton.co.in"/>	DNS Servers:	<input type="text" value="192.168.1.1"/> <input type="text"/> <input type="text"/>
Interface:	<input checked="" type="checkbox"/> LAN1 <input type="checkbox"/> LAN2 <input checked="" type="checkbox"/> LAN3 <input checked="" type="checkbox"/> LAN4 <input type="checkbox"/> WLAN <input checked="" type="checkbox"/> VAP0 <input checked="" type="checkbox"/> VAP1 <input type="checkbox"/> VAP2														
IP Pool Range:	192.168.1. <input type="text" value="100"/> - 192.168.1. <input type="text" value="200"/> <input type="button" value="Show Client"/>														
Subnet Mask:	<input type="text" value="255.255.255.0"/>														
Default Gateway:	<input type="text" value="192.168.1.1"/>														
Max Lease Time:	<input type="text" value="1440"/> minutes														
Domain Name:	<input type="text" value="iballbaton.co.in"/>														
DNS Servers:	<input type="text" value="192.168.1.1"/> <input type="text"/> <input type="text"/>														
<input type="button" value="Apply Changes"/>	<input type="button" value="Undo"/>														

The following table describes the parameters of this page:

Field	Description
DHCP Mode	If set to DHCP Server , the router can assign IP addresses, IP default gateway and DNS Servers to the host in Windows95, Windows NT and other operation systems that support the DHCP client.
IP Pool Range	It specifies the first and the last IP address in the IP address pool. The router assigns the IP address in the IP pool range to the host.
Show Client	Click it, the Active DHCP Client Table appears. It shows IP addresses assigned to clients.
Default Gateway	Enter the default gateway of the IP address pool.

Field	Description
Max Lease Time	The lease time determines the period that the host retains 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	You can configure the DNS server IP addresses for DNS Relay.
Set VendorClass IP Range	Click it, the Device IP Range Table page appears. You can configure the IP address range based on the device type.

Click **Show Client** in the **DHCP Mode** page, the page shown in the following figure appears. You can view the IP address assigned to each DHCP client.

Active DHCP Client Table				
This table shows the assigned IP address, MAC address and time expired for each DHCP leased client.				
Name	IP Address	MAC Address	Expiry(s)	Type
<input type="button" value="Refresh"/> <input type="button" value="Close"/>				

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

Field	Description
IP Address	It displays the IP address assigned to the DHCP client from the router.
MAC Address	It displays the MAC address of the DHCP client. Each Ethernet device has a unique MAC address. The MAC address is assigned at the factory and it consists of six pairs of hexadecimal character, for example, 00-A0-C5-00-02-12.

Field	Description
Expired (s)	It displays the lease time. The lease time determines the period that the host retains the assigned IP addresses before the IP addresses change.
Refresh	Click it to refresh this page.
Close	Click it to close this page.

Click **Set VendorClass IP Range** in the **DHCP Mode** page, the page as shown in the following figure appears. In this page, you can configure the IP address range based on the device type.

Device IP Range Table
This menu is used to configure the IP address range based on device type.

device name:	<input type="text"/>
start address:	192.168.1. <input type="text"/>
end address:	192.168.1. <input type="text"/>
Router address:	<input type="text"/>
option60	<input type="text"/>

IP Range Table:

select:	device name:	start address:	end address:	default gateway:	option60:
---------	--------------	----------------	--------------	------------------	-----------

Buttons: add, delete, modify, Close

In the **DHCP Mode** field, choose **None**. The page shown in the following figure appears.

DHCP Mode
This menu can be used to config the DHCP mode None,DHCP Relay or DHCP Server.

(1)Enable the DHCP Server if you are using this device as a DHCP server. This page lists the IP address pools available to host on your LAN. The device distributes numbers in the pool to host on your network as they request Internet access.

(2)Enable the DHCP Relay if you are using the other DHCP server to assign IP address to your host on the LAN. You can set the DHCP server IP address.

(3)If you choose "None", then the modem will do nothing when the host request a IP address.

LAN IP Address: 192.168.1.1	Subnet Mask: 255.255.255.0
DHCP Mode:	<input type="button" value="None"/>
<input type="button" value="Apply Changes"/>	<input type="button" value="Undo"/>
<input type="button" value="Set VendorClass IP Range"/>	

In the **DHCP Mode** field, choose **DHCP Relay**. The page shown in the following figure appears.

DHCP Mode

This menu can be used to config the DHCP mode:None,DHCP Relay or DHCP Server.
(1)Enable the DHCP Server if you are using this device as a DHCP server. This page lists the IP address pools available to host on your LAN. The device distributes numbers in the pool to host on your network as they request Internet access.
(2)Enable the DHCP Relay if you are using the other DHCP server to assign IP address to your host on the LAN. You can set the DHCP server IP address.
(3)If you choose "None", then the modem will do nothing when the host request a IP address.

LAN IP Address: 192.168.1.1	Subnet Mask: 255.255.255.0
DHCP Mode:	DHCP Relay ▼
Relay Server: 192.168.2.242	
Apply Changes Undo	
Set VendorClass IP Range	

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

Field	Description
DHCP Mode	If set to DHCP Relay , the router acts a surrogate DHCP Server and relays the DHCP requests and responses between the remote server and the client.
Relay Server	Enter the DHCP server address provided by your ISP.
Apply Changes	Click it to save the settings of this page.

DHCP Static

Choose **Network Setup > LAN > DHCP Static IP**, 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 Configuration

This menu lists the fixed IP/MAC address on your LAN. The device distributes the number configured to hosts on your network as they request Internet access.

IP Address:	0.0.0.0	
Mac Address:	000000000000 (ex. 00E086710502)	
Add	Delete Selected	Undo
DHCP Static IP Table:		
Select	IP Address	MAC Address

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

Field	Description
IP Address	Enter the specified IP address in the IP pool range, which is assigned to the host.
Mac Address	Enter the MAC address of a host on the LAN.
Add	After entering the IP address and MAC address, click it. A row will be added in the DHCP Static IP Table .
Delete Selected	Select a row in the DHCP Static IP Table , then click it, this row is deleted.

LAN IPv6

Choose **Network Setup > LAN > LAN IPv6**, the page shown in the following figure appears.

LAN IPv6 Setting

This menu is used to configure ipv6 lan setting. User can set lan RA server work mode and lan DHCPv6 server work mode.

Lan Global Address Setting

Global Address: /

Apply Changes

RA Setting

Enable:

M Flag:

O Flag:

Max Interval: Secs

Min Interval: Secs

Prefix Mode: ▾

ULA Enable:

RA DNS Enable:

Apply Changes

DHCPv6 Setting

DHCPv6 Mode: ▾

IPv6 Address Suffix Pool: - (ex. ::1::1:1:1 or ::1)

IPv6 DNS Mode: ▾

Apply Changes

The following table describes the parameters of this page.

Field	Description
Global Address	Specify the LAN global ipv6 address. It can be assigned by ISP.
Enable	Enable or disable the Router Advertisement feature.
M Flag	Enable or disable the “Managed address configuration” flag in RA packet.
O Flag	Enable or disable the “Other configuration” flag in RA packet.
Prefix Mode	Specify the RA feature prefix mode: “Auto”: the RA prefix will use WAN dhcp-pd prefix; “Manual”: user will specify the prefix address, length, preferred time and valid time.
DHCPv6 Mode	Specify the dhcipv6 server mode: “None”: close dhcipv6 server; “Manual”: dhcipv6 server is opened and user specifies the dhcipv6 server address pool and other parameters. “Auto”: dhcipv6 server is opened and it use WAN dhcp-pd prefix to generate address pool.

5.3.3 Wireless

Wireless Basic Settings

Choose **Network Setup > Wireless > Basic Settings**, the page shown in the following figure appears. In this page, you can configure the parameters for wireless LAN clients that may connect to the modem.

Wireless Basic Settings

This menu is used to configure the parameters for your wireless network.

<input type="checkbox"/> Disable Wireless Radio	
Band:	Automatic (802.11b/g/n) ▾
Mode:	AP ▾
SSID:	iBall-Baton
Channel Width:	20/40MHZ ▾
Control Sideband:	Upper ▾
Channel Number:	Auto ▾ Current Channel: 1
Radio Power (Percent):	100% ▾
Associated Clients:	Show Active Clients
Apply Changes	

The following table describes the parameters of this page:

Field	Description
Band	Choose the adapted band of the modem from the drop-down list.
Mode	Set the working mode of the device. The mode may vary from software to software. By default, the network mode of the modem is AP .
SSID	Set a name for the wireless network of your device. Wireless stations associating to the modem must have the same SSID.
Channel Width	You can select 20MHZ , 40MHZ or 20/40MHZ .
Control Sideband	Only when choose 40MHZ for Channel Width, you

Field	Description
	can set this parameter. You can choose Upper or Lower from the drop-down list.
Channel Number	A channel is the radio frequency used by 802.11b/g/n wireless devices. 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 box.
Radio Power	Choose the transmission power of the radio signal. It is recommended to leave the default setting. The default setting is 100% .
Show Active Clients	Click it to view the information of the wireless clients that are connected to the modem.
Apply Changes	Click it to apply the settings temporarily. If you want to save the settings of this page permanently, click Save in the lower left corner.

Wireless Security

Choose **Network Setup > Wireless > Wireless Security** and the following page appears.

Wireless Security Setup

This menu allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

SSID TYPE:	<input checked="" type="radio"/> Root	<input type="radio"/> VAP0	<input type="radio"/> VAP1	<input type="radio"/> VAP2
Encryption:	<input type="button" value="None"/>			
<input type="checkbox"/> Use 802.1x Authentication	<input checked="" type="radio"/> WEP 64bits <input type="radio"/> WEP 128bits			
WPA Authentication Mode:	<input type="radio"/> Enterprise (RADIUS) <input checked="" type="radio"/> Personal (Pre-Shared Key)			
Pre-Shared Key Format:	<input type="button" value="Passphrase"/>			
Pre-Shared Key:	<input type="text"/>			
Authentication RADIUS Server:	Port <input type="text" value="1812"/>	IP address <input type="text" value="0.0.0.0"/>	Password <input type="text"/>	
<i>Note: When encryption WEP is selected, you must set WEP key value.</i>				
<input type="button" value="Apply Changes"/>				

The following table describes the parameters of this page:

Field	Description
Encryption	<p>Configure the wireless encryption mode. You can choose None, WEP, WPA (TKIP), WPA (AES), WPA2 (AES), WPA2 (TKIP), or WPA2 Mixed.</p> <ul style="list-style-type: none">● Wired equivalent privacy (WEP) encrypts data frames before transmitting over the wireless network.● Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft.● WPA2 Mixed is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the modem through WPA or WPA2. <p>Key differences between WPA and WEP are user authentication and improved data encryption.</p>
WPA Authentication Mode	<ul style="list-style-type: none">● Select Personal (Pre-Shared Key), enter the pre-shared key in the Pre-Shared Key field.

Field	Description
	<ul style="list-style-type: none">● 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. <p>If the encryption is set to WEP, the modem uses 802.1 X authentication, which is Radius authentication.</p>
Apply Changes	Click it to apply the settings temporarily. If you want to save the settings of this page permanently, click Save in the lower left corner.

Set the **Encryption** to be **WEP**, then click **Set WEP Key**, and the following page appears.



Note:

If the encryption is set to be **WEP**, the WPS function will be disabled.

Wireless Security Setup

This menu allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

SSID TYPE: Root VAP0 VAP1 VAP2

Encryption:

Key Length:

Key Format:

Default Tx Key:

Encryption Key 1:

Encryption Key 2:

Encryption Key 3:

Encryption Key 4:

Use 802.1x Authentication WEP 64bits WEP 128bits

WPA Authentication Mode: Enterprise (RADIUS) Personal (Pre-Shared Key)

Pre-Shared Key Format:

Pre-Shared Key:

Authentication RADIUS Server: Port IP address Password

Note: When encryption WEP is selected, you must set WEP key value.

Apply Changes

The following describes the parameters of this page:

Field	Description
Key Length	Choose the WEP key length. You can Choose 64-bit or 128-bit .
Key Format	<ul style="list-style-type: none">• If you choose 64-bit, you can choose ASCII (5 characters) or Hex (10 characters).• If you choose 128-bit, you can choose ASCII (13 characters) or Hex (26 characters).
Default Tx Key	Choose the index of WEP Key. You can choose Key 1 , Key 2 , Key 3 , or Key 4 .
Encryption Key 1 to 4	The Encryption keys are used to encrypt the data. Both the modem and wireless stations must use the

Field	Description
	<p>same encryption key for data transmission.</p> <ul style="list-style-type: none">● If you choose 64-bit and ASCII (5 characters), enter any 5 ASCII characters.● If you choose 64-bit and Hex (10 characters), enter any 10 hexadecimal characters.● If you choose 128-bit and ASCII (13 characters), enter any 13 ASCII characters.● If you choose 128-bit and Hex (26 characters), enter any 26 hexadecimal characters.

Multi SSID

Choose **Network Setup > Wireless > Multi SSID** and the following page appears. This page allows you to set virtual access points (VAP). Here you can enable/disable virtual AP, and set its SSID and authentication type. click **Apply Changes** to take it effect.

Wireless Multi SSID Settings

This menu allows you to set virtual access points(VAP). Here you can enable/disable virtual AP, and set its SSID and authentication type. click "Apply Changes" to take it effect.

<input type="checkbox"/> Enable VAP0
SSID: <input type="text" value="iBall-Baton_2"/>
Broadcast SSID: <input type="radio"/> Enable <input checked="" type="radio"/> Disable
Relay Blocking: <input type="radio"/> Enable <input checked="" type="radio"/> Disable
Guest Network <input type="radio"/> Enable <input checked="" type="radio"/> Disable
Authentication Type: <input type="radio"/> Open System <input type="radio"/> Shared Key <input checked="" type="radio"/> Auto
<input type="checkbox"/> Enable VAP1
SSID: <input type="text" value="iBall-Baton_3"/>
Broadcast SSID: <input type="radio"/> Enable <input checked="" type="radio"/> Disable
Relay Blocking: <input type="radio"/> Enable <input checked="" type="radio"/> Disable
Guest Network <input type="radio"/> Enable <input checked="" type="radio"/> Disable
Authentication Type: <input type="radio"/> Open System <input type="radio"/> Shared Key <input checked="" type="radio"/> Auto
<input type="checkbox"/> Enable VAP2
SSID: <input type="text" value="Guest"/>
Broadcast SSID: <input type="radio"/> Enable <input checked="" type="radio"/> Disable
Relay Blocking: <input checked="" type="radio"/> Enable <input type="radio"/> Disable
Guest Network <input checked="" type="radio"/> Enable <input type="radio"/> Disable
Authentication Type: <input type="radio"/> Open System <input type="radio"/> Shared Key <input checked="" type="radio"/> Auto
Apply Changes

MAC Filtering

Choose **Network Setup > Wireless > MAC Filtering** and the following page appears. If you choose **Allow Listed**, only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Access Point. When **Deny Listed** is selected, these wireless clients on the list will not be able to connect the Access Point.

Wireless Access Control

If you choose 'Allowed Listed', only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Access Point. When 'Deny Listed' is selected, these wireless clients on the list will not be able to connect the Access Point.

Wireless Access Control Mode:

MAC Address: (ex. 001EA6458563)

Current Access Control List:

MAC Address	Select

Advanced

Choose **Network Setup > Wireless > Advanced** and the following page appears. In this page, you can configure the wireless advanced parameters. It is recommended to use the default parameters.

The following table describes parameters in this page:

Field	Description
Fragmentation Threshold (256-2346)	Set the threshold of fragmentation length. If the length of a packet is greater than the value, the packet is automatically fragmented into several packets. Because too many packets lead to low performance of the wireless network, the value of Fragmentation Length cannot be too small. The default value is 2346.
RTS Threshold	Set the CTS/RTS threshold. If the length of a packet is greater than the value, the router sends an RTS frame to the destination station to negotiate. After receiving the RTS frame, the wireless station responds with a Clear to Send (CTS) frame to the router, indicating that they can communicate with each other. The default value is 2346.

Field	Description
Data Rate	Choose the transmission rate of the wireless data from the dropdown list.
PreambleType	<ul style="list-style-type: none"> ● Long Preamble: It means this card always use long preamble. ● Short Preamble: It means this card can support short preamble capability.
Broadcast SSID	<p>Select whether the modem broadcasts SSID or not. You can select Enable or Disable.</p> <ul style="list-style-type: none"> ● Select Enable, the SSID can be detected. ● Select Disable to hide SSID, the wireless clients cannot find the SSID. You need to enter the SSID and password of the wireless network manually.
Relay Blocking	Wireless isolation. Select Enable , the wireless clients that are connected to the modem cannot intercommunication.
Ethernet to Wireless Blocking	Whether the wireless network can communicate with the Ethernet network or not.
Wifi Multicast to Unicast	Enable or disable it. Multicast to unicast conversion to provide reliable transmission and reduce the loss and delay, which is necessary for multimedia applications.
Aggregation	Enable or disable it. Aggregation is a feature of the 802.11n wireless LAN standards that increases throughput by sending two or more data frames in a single transmission.
Short GI	Enable or disable it. GI is guard interval that is used to ensure that distinct transmissions do not interfere with one another. Short GI is 0.4 μ s guard interval. The short guard interval results in a higher packet error rate when the delay spread of the channel exceed the guard interval and/or if timing synchronization between the transmitter and receiver is not precise.

Field	Description
WMM	Enable or disable it. WMM is a Wi-Fi Alliance interoperability certification, based on the IEEE802.11e standard. It provides basic Quality of service (QoS) features to IEEE 802.11 networks. WMM prioritizes traffic according to four Access Categories (AC) - voice, video, best effort, and background. However, it does not provide guaranteed throughput. It is suitable for well defined applications that require QoS, such as Voice over IP (VoIP) on Wi-Fi phones.

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

WPS

Choose **Network Setup > Wireless > WPS** and the following page appears.

Wi-Fi Protected Setup

This menu allows you to change the setting for WPS (Wi-Fi Protected Setup). Using this feature could let your wireless client automatically synchronize its setting and connect to the Access Point in a minute without any hassle.

<input type="checkbox"/> Disable WPS	
WPS Status:	<input type="radio"/> Configured <input checked="" type="radio"/> UnConfigured
Self-PIN Number:	<input type="text"/> Regenerate PIN
Push Button Configuration:	Start PBC
<input type="button" value="Apply Changes"/> <input type="button" value="Reset"/>	
<input type="text"/> Start PIN	

There are two ways for the wireless client to establish the connection with the device through WPS.

The Device Generates PIN: Click **Regenerate PIN** to generate a new PIN, and then click **Start PBC**. In the wireless client tool, enter the PIN generated by the modem, and then start connection. The client will automatically establish the connection with the modem through the encryption mode, and you need not to enter the key.

The Wireless Client Generates PIN: Enter a PIN of the wireless client in the field, and then click **Start PIN** to establish the connection.



Note:

The wireless client is not able to establish the connection with iB-WRA150N2 through WPS negotiation unless it supports WPS.

WDS

Wireless distribution system (WDS) enables interconnection between APs in an IEEE 802.11 wireless network. It extends the wireless network through several APs, without connection of wired backbone network. This function is also called wireless repeating or bridging.

Choose **Network Setup > Wireless > WDS** and the following page appears. In this page, you can enable WDS function and set relative parameters.

WDS Settings

Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.

<input type="checkbox"/> Enable WDS		
Add WDS AP		
MAC Address:	<input type="text"/>	
Comment:	<input type="text"/>	
Apply Changes Reset		
Current WDS AP List:		
MAC Address	Comment	Select
Delete Selected Delete All		

Universal Repeater

Choose **Network Setup > Wireless > Universal Repeater** and the following page appears. In this page, you can set parameters for wireless repeater.

Universal Repeater Settings

This menu is used to configure the parameters for wireless repeater.

Step 1: click "Site Survey". Sites surveyed will be displayed in the list below. Select one item, and click "Next".



The interface for 'Universal Repeater Settings' is shown. It includes a checkbox for 'Repeater Enabled' (which disables the 'DHCP Server'), a text input for 'SSID of AP', a 'Site Survey' button, and an 'Apply' button at the bottom.

5.4 Advanced Setting

In the navigation bar, click **Advanced**. The **Advanced Settings** page that is displayed contains **Route**, **NAT**, **QoS**, **TR-069**, **Virtual Port Group**, and **Management**.

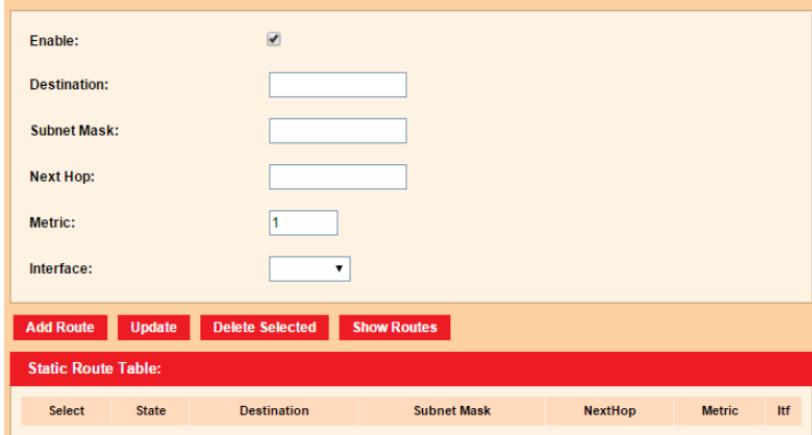
5.4.1 Routing

Static Route

Choose Advanced Settings > **Routing** > **Static Route**, 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.

Routing Settings

This menu is used to configure the routing information. Here you can add/delete IP routes.



The 'Routing Settings' interface allows configuration of a static route. It includes fields for 'Enable' (checked), 'Destination' (IP address), 'Subnet Mask' (netmask), 'Next Hop' (Gateway), 'Metric' (value 1), and 'Interface' (selected). Below these are buttons for 'Add Route', 'Update', 'Delete Selected', and 'Show Routes'. A 'Static Route Table' section at the bottom displays a table with columns: Select, State, Destination, Subnet Mask, NextHop, Metric, and Itf.

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

Field	Description
Enable	Select it to use 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 cost for the destination.
Interface	The interface for the specified route.
Add Route	Click it to add the new static route to the Static Route Table .
Update	Select a row in the Static Route Table and modify the parameters. Then click it to save the settings temporarily.
Delete Selected	Select a row in the Static Route Table and click it to delete the row.
Show Routes	Click it, the IP Route Table appears. You can view a list of destination routes commonly accessed by your network.
Static Route Table	A list of the previously configured static IP routes.

Click **Show Routes**, the page shown in the following figure appears. The table shows a list of destination routes commonly accessed by your network.

IP Route Table

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

Destination	Subnet Mask	NextHop	Interface
192.168.1.1	255.255.255.255	*	Ethernet1
192.168.1.0	255.255.255.0	*	Ethernet1

Refresh **Close**

IPv6 Static Route

Choose Advanced Settings > **Routing > IPv6 Static Route**, 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.

IPv6 Routing Settings

This menu is used to configure the ipv6 routing information. Here you can add/delete IPv6 routes.

Destination:	<input type="text"/>		
Prefix Length:	<input type="text"/>		
Next Hop:	<input type="text"/>		
Interface:	<input type="button" value="▼"/>		
Add Route Delete Selected			
IPv6 Static Route Table:			
Select	Destination	NextHop	Interface

RIP

Choose Advanced Settings > **Routing** > **RIP**, 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.

RIP Configuration

Enable the RIP if you are using this device as a RIP-enabled router to communicate with others using the Routing Information Protocol.

RIP:	<input checked="" type="radio"/> Off <input type="radio"/> On	<input type="button" value="Apply"/>
interface:	<input type="button" value="LAN ▾"/>	
Recv Version:	<input type="button" value="RIP1 ▾"/>	
Send Version:	<input type="button" value="RIP1 ▾"/>	
Add	Delete	
Rip Config List:		
Select	interface	Recv Version

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

Field	Description
RIP	Select Enable , the router communicates with other

Field	Description
	RIP-enabled devices.
Apply	Click it to save the settings of this page.
Interface	Choose the router interface that uses RIP.
Recv Version	<p>Choose the interface version that receives RIP messages. You can choose RIP1, RIP2, or Both.</p> <ul style="list-style-type: none"> Choose RIP1 indicates the router receives RIP v1 messages. Choose RIP2 indicates the router receives RIP v2 messages. Choose Both indicates the router receives RIP v1 and RIP v2 messages.
Send Version	<p>The working mode for sending RIP messages. You can choose RIP1 or RIP2.</p> <ul style="list-style-type: none"> Choose RIP1 indicates the router broadcasts RIP1 messages only. Choose RIP2 indicates the router multicasts RIP2 messages only.
Add	Click it to add the RIP interface to the Rip Config List .
Delete	Select a row in the Rip Config List and click it to delete the row.

5.4.2 NAT

DMZ

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

Choose Advanced Settings > **NAT** > **DMZ**, the page shown in the following figure appears.

The following describes how to configure manual DMZ.

Step 1 Select WAN interface.

Step 2 Enter an IP address of the DMZ host.

Step 3 Click **Apply Changes** to save the settings of this page temporarily.

DMZ

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

WAN Interface:	pppoe1 ▾	
DMZ Host IP Address:	<input type="text"/>	
Apply Changes Reset		
Current DMZ Table:		
Select	WAN Interface	DMZ IP
Delete Selected		

Virtual Server

Choose Advanced Settings > **NAT > Virtual Service**, and the page shown in the following figure appears.

Virtual Server

This menu allows you to config virtual server, so others can access the server through the Gateway.

Service Type:	<input checked="" type="radio"/> Usual Service Name: AUTH ▾						
	<input type="radio"/> User-defined Service Name: <input type="text"/>						
Protocol:	TCP ▾						
WAN Setting:	Interface ▾						
WAN Interface:	pppoe1 ▾						
WAN Port:	<input type="text"/> 113	(ex. 5001:5010)					
LAN Port:	<input type="text"/> 113						
LAN Ip Address:	<input type="text"/>						
Apply Changes							
Current Virtual Server Forwarding Table:							
ServerName	Protocol	Local IP Address	Local Port	WAN IP Address	WAN Port	State	Action

The following table describes the parameters of this page.

Field	Description
Service Type	You can select the common service type, for example, AUTH , DNS . You can also define a service name. <ul style="list-style-type: none">● If you select Usual Service Name, the corresponding parameter has the default settings.● If you select User-defined Service Name, you need to enter the corresponding parameters.
Protocol	Choose the transport layer protocol that the service type uses. You can choose TCP or UDP .
WAN Setting	You can choose Interface or IP Address .
WAN Interface	Choose the WAN interface that will apply virtual server.
WAN Port	Choose the access port on the WAN.
LAN Port	Enter the port number of the specified service type.
LAN IP Address	Enter the IP address of the virtual server. It is in the same network segment with LAN IP address of the router.

ALG

Choose **Advanced Settings > NAT > ALG**, and the page shown in the following figure appears. Choose the NAT ALG and Pass-Through options, and then click **Apply Changes**.

NAT ALG and Pass-Through

Setup NAT ALG and Pass-Through configuration

IPSec Pass-Through:	<input checked="" type="checkbox"/> Enable
L2TP Pass-Through:	<input checked="" type="checkbox"/> Enable
PPTP Pass-Through:	<input checked="" type="checkbox"/> Enable
FTP:	<input checked="" type="checkbox"/> Enable
H.323:	<input checked="" type="checkbox"/> Enable
SIP:	<input checked="" type="checkbox"/> Enable
RTSP:	<input checked="" type="checkbox"/> Enable
ICQ:	<input checked="" type="checkbox"/> Enable
MSN:	<input checked="" type="checkbox"/> Enable

Apply Changes

Reset

NAT Exclude IP

Choose Advanced **Settings** > **NAT** > **NAT Exclude IP**, and the page shown in the following figure appears.

In the page, you can configure some source IP addresses which use the purge route mode when accessing internet through the specified interface.

NAT EXCLUDE IP

This menu is used to config some source ip address which use the purge route mode when access internet through the specified interface.

interface:	pppoe1		
IP Range:	<input type="text"/> --- <input type="text"/>		
Apply Changes Reset			
Current NAT Exclude IP Table:			
WAN Interface	Low IP	High IP	Action

Port Trigger

Choose Advanced Settings > NAT > Port Trigger and the page shown in the following figure appears.

Nat Port Trigger

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Nat Port Trigger:	<input type="radio"/> Enable <input checked="" type="radio"/> Disable					
Apply Changes						
Application Type:						
<input checked="" type="radio"/> Usual Application Name:	<input type="button" value="Select One"/>					
<input type="radio"/> User-defined Application Name:	<input type="text"/>					
Start Match Port	End Match Port	Trigger Protocol	Start Relate Port	End Relate Port	Open Protocol	Nat Type
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
<input type="text"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	UDP	outgoing
Apply Changes						

Click the **Usual Application Name** drop-down menu to choose the application you want to Setup for port triggering. When you have chosen an application the default Trigger settings will populate the table below.

If the application you want to Setup isn't listed, click the **User-defined Application Name** radio button and type in a name for the trigger in the Custom application field. Configure the **Start Match Port**, **End Match Port**, **Trigger Protocol**, **Start Relate Port**, **End Relate Port**, **Open Protocol** and **Nat type** settings for the port trigger you want to configure.

When you have finished, click the **Apply changes** button.

FTP ALG Port

Choose Advanced **Settings > NAT > FTP ALG Port**, the page shown in the following figure appears. The common port for FTP connection is port 21, and a common ALG monitors the TCP port 21 to ensure NAT pass-through of FTP. By enabling this function, when the FTP server connection port is not a port 21, the FTP ALG module will be informed to monitor other TCP ports to ensure NAT pass-through of FTP.

FTP ALG Settings

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

FTP ALG port:	<input type="text"/>
Add Dest Ports Delete Selected DestPort	
FTP ALG ports Table:	
Select	Ports
<input checked="" type="radio"/>	21

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

Field	Description
FTP ALG port	Set an FTP ALG port.
Add Dest Ports	Add a port configuration.
Delete Selected DestPort	Delete a selected port configuration from the list.

Nat IP Mapping

NAT is short for Network Address Translation. The Network Address Translation Settings window allows you to share one WAN IP address for multiple computers on your LAN.

Choose Advanced Settings > **NAT** > **Nat IP Mapping**, the page shown in the following figure appears

Entries in this table allow you to configure one IP pool for specified source IP address from LAN, so one packet whose source IP is in range of the specified address will select one IP address from the pool for NAT.

NAT IP MAPPING

Entries in this table allow you to config one IP pool for specified source ip address from lan,so one packet which's source ip is in range of the specified address will select one IP address from pool for NAT.

Type:	One-to-One
Local Start IP:	
Local End IP:	
Global Start IP:	
Global End IP:	

Apply Changes **Reset**

Current NAT IP MAPPING Table:

Local Start IP	Local End IP	Global Start IP	Global End IP	Action
----------------	--------------	-----------------	---------------	--------

Delete Selected **Delete All**

Figure 6

5.4.3 QoS

Choose Advanced Settings > **QoS** to display the submenus. You can select **QoS** or **Traffic Shaping** to do relevant settings.



5.4.4 TR-069

Choose Advanced Settings > **TR-069**, and the page shown in the following page appears. In this page, you can configure the TR-069 CPE.

TR-069 Configuration

This menu is used to configure the TR-069 CPE. Here you may change the setting for the ACS's parameters.

ACS: Enable: <input type="checkbox"/> URL: <input type="text"/> User Name: <input type="text"/> Password: <input type="text"/> Periodic Inform Enable: <input type="radio"/> Disable <input checked="" type="radio"/> Enable Periodic Inform Interval: <input type="text"/> 300 seconds	Connection Request: User Name: <input type="text"/> Password: <input type="text"/> Path: <input type="text"/> /tr069 Port: <input type="text"/> 7547	Debug: ACS Certificates CPE: <input checked="" type="radio"/> No <input type="radio"/> Yes Show Message: <input type="radio"/> Disable <input checked="" type="radio"/> Enable CPE Sends GetRPC: <input type="radio"/> Disable <input checked="" type="radio"/> Enable Skip MReboot: <input type="radio"/> Disable <input checked="" type="radio"/> Enable Delay: <input type="radio"/> Disable <input checked="" type="radio"/> Enable Auto-Execution: <input type="radio"/> Disable <input checked="" type="radio"/> Enable
Apply Changes Reset		
Certificate Management: CPE Certificate Password: <input type="text"/> client <input type="button" value="Apply"/> <input type="button" value="Undo"/> CPE Certificate: <input type="button" value="Choose File"/> No file chosen <input type="button" value="Upload"/> <input type="button" value="Delete"/> CA Certificate: <input type="button" value="Choose File"/> No file chosen <input type="button" value="Upload"/> <input type="button" value="Delete"/>		

The following table describes the parameters of this page:

Field	Description
ACS	
URL	The URL of the auto-configuration server to connect to.
User Name	The user name for logging in to the ACS.
Password	The password for logging in to the ACS.
Periodic Inform Enable	Select Enable to periodically connect to the ACS to check whether the configuration updates.
Periodic Inform Interval	Specify the amount of time between connections to ACS.
Connection Request	
User Name	The connection username provided by TR-069 service.
Password	The connection password provided by TR-069 service.
Debug	
Show Message	Select Enable to display ACS SOAP messages on the serial console.
CPE sends GetRPC	Select Enable , 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.

5.4.5 Virtual Port Group

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



Figure 7

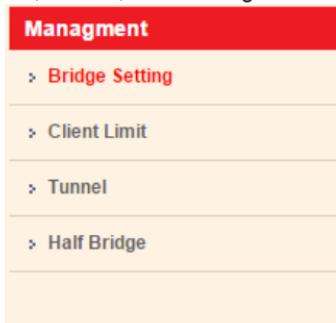
The procedure for manipulating a mapping group is as follows:

- Step 1** Select **Enable** to enable this function.
- Step 2** Select a group from the table.
- Step 3** Select interfaces from the WAN and LAN interface list and add them to the grouped interface list using the arrow buttons to manipulate the required mapping of the ports.

Click **Apply** to save the changes.

5.4.6 Management

Choose Advanced Settings > Management to display the submenus. You can select **Bridge Setting**, **Client Limit**, **Tunnel**, or **Half Bridge** to set relevant parameters.



5.5 Access Management

5.5.1 IGMP

IGMP Proxy

Choose **Access Management** > **IGMP** > **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.

IGMP Proxy Settings

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 when you enable it according to the following:

- Enable IGMP proxy on WAN interface (upstream), which connects to a router running IGMP.
- Enable IGMP on LAN interface (downstream), which connects to its hosts.

IGMP Proxy:	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Multicast Allowed:	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Robust Count:	<input type="text" value="2"/>
Last Member Query Count:	<input type="text" value="2"/>
Query Interval:	<input type="text" value="60"/> (seconds)
Query Response Interval:	<input type="text" value="100"/> (*100ms)
Group Leave Delay:	<input type="text" value="2000"/> (ms)

Apply Changes **Undo**

MLD

Choose **Access Management > IGMP > IGMP Proxy**, and the page shown in the following figure appears.

MLD Settings

MLD Proxy and Snooping can be configured here.

MLD proxy:	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
MLD snooping:	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Robust Counter:	2
Query Interval:	125 (Second)
Query Response Interval:	10000 (millisecond)
Response Interval of Last Group Member:	1 (Second)

Apply Changes **Cancel**

5.5.2 UPnP

UPnP

Choose **Access Management > UPnP > 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.

UPnP Settings

This menu is used to configure UPnP. The system acts as a daemon when you enable UPnP.

UPnP:	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
WAN Interface:	<input type="button" value="▼"/>

Apply Changes

5.5.3 SNMP

Choose **Access Management > SNMP**, and the page shown in the following figure appears. You can configure the SNMP parameters.

SNMP Settings

This menu is used to configure the SNMP protocol. Here you may change the setting for system description, trap ip address, community name, etc..

Enable SNMP

System Description 300M Wireless-N ADSL2+ 3G & Broadband Router

System Contact iBall Baton

System Name iB-WRA300N3GT

System Location iBall Baton

Trap IP Address

Community name (read-only) public

Community name (read-write) private

Apply Changes

Reset

The following table describes the parameters of this page:

Field	Description
Enable SNMP	Select it to enable SNMP function. You need to enable SNMP, then you can configure the parameters of this page.
Trap IP Address	Enter the trap IP address. The trap information is sent to the corresponding host.
Community name (Read-only)	The network administrators must use this password to read the information of this router.
Community name (Read-Write)	The network administrators must use this password to configure the information of the router.

5.5.4 DNS

DNS

Choose **Access Management > DNS > DNS**, and the page shown in the following figure appears.

DNS Settings

This menu is used to configure the DNS server ip addresses for DNS Relay.

Attain DNS Automatically

Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Apply Changes

Reset Selected

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

Field	Description
Set DNS Automatically	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	Select it, enter the IP addresses of the primary and secondary DNS server.
Apply Changes	Click it to save the settings of this page.
Reset Selected	Click it to start configuring the parameters in this page.

IPv6 DNS

Choose **Access Management > DNS > IPv6 DNS**, and the page shown in the following figure appears.

IPv6 DNS Settings

This menu is used to configure the DNS server ipv6 addresses.

Attain DNS Automatically

Set DNS Manually

DNS 1: Interface:

DNS 2: Interface:

DNS 3: Interface:

Apply Changes

Reset Selected

5.5.5 DynDNS

Choose **Access Management > DynDNS**, and the page shown in the following figure appears. This page is used to configure the dynamic DNS address. You can add or remove to configure dynamic DNS.

DynDNS Settings
This menu is used to configure the Dynamic DNS address from DynDNS.org or TZO. Here you can Add/Remove to configure Dynamic DNS.

DDNS provider:	DynDNS.org				
Hostname:	<input type="text"/>				
Interface:	pppoe1				
Enable:	<input checked="" type="checkbox"/>				
DynDNS Settings:					
Username:	<input type="text"/>				
Password:	<input type="text"/>				
TZO Settings:					
Email:	<input type="text"/>				
Key:	<input type="text"/>				
NO-IP Settings:					
Email:	<input type="text"/>				
Password:	<input type="text"/>				
Add	Remove				
Dynamic DNS Table:					
Select	State	Service	Hostname	Username	Interface

The following table describes the parameters of this page:

Field	Description
DDNS provider	Choose the DDNS provider name.
Host Name	The DDNS identifier.
Interface	The WAN interface of the router.
Enable	Enable or disable DDNS function.
Username	The name provided by DDNS provider.
Password	The password provided by DDNS provider.
Email	The email provided by DDNS provider.
Key	The key provided by DDNS provider.

5.6 Security Settings

5.6.1 MAC Filter

Choose **Security Settings > MAC Filter**, 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.

MAC Filtering
Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Outgoing Default Policy	<input type="radio"/> Deny <input checked="" type="radio"/> Allow			
Incoming Default Policy	<input type="radio"/> Deny <input checked="" type="radio"/> Allow			
Apply				
Direction:	<input type="button" value="Outgoing"/>			
Action:	<input checked="" type="radio"/> Deny <input type="radio"/> Allow			
Source MAC:	<input type="text"/> (ex. 00E086710502)			
Destination MAC:	<input type="text"/> (ex. 00E086710502)			
Add				
Current MAC Filter Table:				
Select	Direction	Source MAC	Destination MAC	Action
Delete	Delete All			

5.6.2 IP/Port Filter

IP/Port Filter

Choose **Security Settings > IP/Port Filter > IP/Port Filter**, 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.

IP/Port Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Outgoing Default Policy	<input checked="" type="radio"/> Permit <input type="radio"/> Deny								
Incoming Default Policy	<input type="radio"/> Permit <input checked="" type="radio"/> Deny								
Rule Action:	<input checked="" type="radio"/> Permit <input type="radio"/> Deny								
WAN Interface:	pppoe1								
Protocol:	IP								
Direction:	Upstream								
Source IP Address:	<input type="text"/>	Mask Address:	255.255.255.255						
Dest IP Address:	<input type="text"/>	Mask Address:	255.255.255.255						
SPort:	<input type="text"/> - <input type="text"/>	DPort:	<input type="text"/> - <input type="text"/>						
Enable:	<input checked="" type="checkbox"/>								
Apply Changes									
Current Filter Table:									
Rule	WanIf	Protocol	Source IP/Mask	SPort	Dest IP/Mask	DPort	State	Direction	Action

IPv6/ Port Filter

Choose **Security Settings > IP/Port Filter > IPv6/Port Filter**, 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.

IPv6/Port Filtering

Entries in this table are used to restrict certain types of ipv6 data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Outgoing Default Policy	<input checked="" type="radio"/> Permit <input type="radio"/> Deny								
Incoming Default Policy	<input checked="" type="radio"/> Permit <input type="radio"/> Deny								
Rule Action:	<input checked="" type="radio"/> Permit <input type="radio"/> Deny								
Protocol:	IPv6 <input type="button" value="▼"/>	Icmp6Type:	PING6 <input type="button" value="▼"/>						
Direction:	Upstream <input type="button" value="▼"/>								
Source IPv6 Address:	<input type="text"/>	Prefix Length:	<input type="text"/>						
Dest IPv6 Address:	<input type="text"/>	Prefix Length:	<input type="text"/>						
SPort:	<input type="text"/> - <input type="text"/>	DPort:	<input type="text"/> - <input type="text"/>						
Enable:	<input checked="" type="checkbox"/>								
<input type="button" value="Apply Changes"/>									
Current Filter Table:									
Rule	Protocol	Source IPv6/Prefix	SPort	Dest IPv6/Prefix	DPort	ICMP6Type	State	Direction	Action

5.6.3 URL Filter

Choose **Security Settings > URL Filter**, and the page shown in the following figure appears. This page is used to block a fully qualified domain name, such as tw.yahoo.com and filtered keyword. You can add or delete FQDN and filtered keyword.

URL Blocking Configuration

This menu is used to configure the filtered keyword. Here you can add/delete filtered keyword.

URL Blocking Capability:	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
<input type="button" value="Apply Changes"/>	
Keyword:	<input type="text"/>
<input type="button" value="AddKeyword"/> <input type="button" value="Delete Selected Keyword"/>	
URL Blocking Table:	
Select	Filtered Keyword

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

Field	Description
URL Blocking Capability	You can choose Disable or Enable . <ul style="list-style-type: none">● Select Disable to disable URL blocking function 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 URL/keyword to the URL/KEYWORD Blocking Table .
URL Blocking Table	A list of the URL (s) to which access is blocked.

5.6.4 ACL

5.6.4.1 ACL

Choose **Security Settings > ACL**, 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.

ACL Settings

You can specify which services are accessible from LAN or WAN side.
Entries in this ACL table are used to permit certain types of data packets from your local network or internet network to the Gateway.
Using of such access control can be helpful in securing or restricting the Gateway management.

Direction Select:	<input checked="" type="radio"/> LAN	<input type="radio"/> WAN			
LAN ACL Switch:	<input type="radio"/> Enable	<input checked="" type="radio"/> Disable			
<input type="button" value="Apply"/>					
IP Address:	<input type="text"/> - <input type="text"/>	(The IP 0.0.0.0 represent any IP)			
Services Allowed:	<input checked="" type="checkbox"/> Any				
<input type="button" value="Add"/>					
Current ACL Table:					
Select	Direction	IP Address/Interface	Service	Port	Action

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

Field	Description
Direction Select	Select the router interface. You can select LAN or WAN . In this example, LAN is selected.
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.
Services Allowed	You can choose the following services from LAN: Web, Telnet, SSH, FTP, TFTP, SNMP, or PING . You can also choose all the services.
Add	After setting the parameters, click it to add an entry to the Current ACL Table .

Set direction of the data packets to **WAN**, the page shown in the following figure appears.

ACL Settings
You can specify which services are accessible from LAN or WAN side.
Entries in this ACL table are used to permit certain types of data packets from your local network or Internet network to the Gateway.
Using of such access control can be helpful in securing or restricting the Gateway management.

Direction Select: LAN WAN

WAN Setting:

WAN Interface:

Services Allowed:

web
 telnet
 ssh
 ftp
 tftp
 snmp
 ping

Add

Current ACL Table:

Select	Direction	IP Address/Interface	Service	Port	Action
0	WAN	pppoe1	telnet	23	<input type="button" value="Delete"/>
1	WAN	pppoe1	web	80	<input type="button" value="Delete"/>
2	WAN	pppoe1	ssh	22	<input type="button" value="Delete"/>
3	WAN	pppoe1	ftp	21	<input type="button" value="Delete"/>

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

Field	Description
Direction Select	Select the router interface. You can select LAN or WAN . In this example, WAN is selected.
WAN Setting	You can choose Interface or IP Address .
WAN Interface	Choose the interface that permits data packets from WAN to access the router.
Services Allowed	You can choose the following services from WAN: web, telnet, ssh, ftp, tftp, snmp or ping . You can also choose all the services.
Add	After setting the parameters, click it to add an entry to the Current ACL Table .

5.6.4.2 IPv6 ACL

Choose **Security Settings > ACL > IPv6 ACL**, the page shown in the following figure appears.

ACL Settings
You can specify which services are accessible from LAN or WAN side.
Entries in this ACL table are used to permit certain types of data packets from your local network or Internet network to the Gateway.
Using of such access control can be helpful in securing or restricting the Gateway management.

Direction Select:	<input checked="" type="radio"/> LAN	<input type="radio"/> WAN			
LAN ACL Switch:	<input type="radio"/> Enable	<input checked="" type="radio"/> Disable			
<input type="button" value="Apply"/>					
IP Address:	<input type="text"/> - <input type="text"/>	(The IP 0.0.0.0 represent any IP)			
Services Allowed:	<input checked="" type="checkbox"/> Any				
<input type="button" value="Add"/>					
Current ACL Table:					
Select	Direction	IP Address/Interface	Service	Port	Action
0	WAN	pppoe1	telnet	23	<input type="button" value="Delete"/>
1	WAN	pppoe1	web	80	<input type="button" value="Delete"/>
2	WAN	pppoe1	ssh	22	<input type="button" value="Delete"/>
3	WAN	pppoe1	ftp	21	<input type="button" value="Delete"/>

5.6.5 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.

Choose **Security Settings > DoS**, and the page shown in the following figure appears. In this page, you can prevent DoS attacks.

DoS Setting

A "denial-of-service" (DoS) attack is characterized by an explicit attempt by hackers to prevent legitimate users of a service from using that service.

Enable DoS Prevention

<input type="checkbox"/> Whole System Flood: SYN	<input type="text" value="100"/> Packets/Second
<input type="checkbox"/> Whole System Flood: FIN	<input type="text" value="100"/> Packets/Second
<input type="checkbox"/> Whole System Flood: UDP	<input type="text" value="100"/> Packets/Second
<input type="checkbox"/> Whole System Flood: ICMP	<input type="text" value="100"/> Packets/Second
<input type="checkbox"/> Per-Source IP Flood: SYN	<input type="text" value="100"/> Packets/Second
<input type="checkbox"/> Per-Source IP Flood: FIN	<input type="text" value="100"/> Packets/Second
<input type="checkbox"/> Per-Source IP Flood: UDP	<input type="text" value="100"/> Packets/Second
<input type="checkbox"/> Per-Source IP Flood: ICMP	<input type="text" value="100"/> Packets/Second
<input type="checkbox"/> TCP/UDP PortScan	<input type="text" value="Low"/> Sensitivity
<input type="checkbox"/> ICMP Smurf	
<input type="checkbox"/> IP Land	
<input type="checkbox"/> IP Spoof	
<input type="checkbox"/> IP TearDrop	
<input type="checkbox"/> PingOfDeath	
<input type="checkbox"/> TCP Scan	
<input type="checkbox"/> TCP SynWithData	
<input type="checkbox"/> UDP Bomb	
<input type="checkbox"/> UDP EchoCharger	

Select All **Clear All**

Enable Source IP Blocking **Block time (sec)**

Apply Changes

Figure 8

5.7 Maintenance

5.7.1 Update

Firmware Update

Choose **Maintenance > Update > Firmware Update**, the page shown in the following figure appears. In this page, you can upgrade the firmware of the router.

Upgrade Firmware

This menu allows you upgrade the Router firmware to new version. Please note, do not power off the device during the upload because it may crash the system.

Note: System will reboot after file is uploaded.

Select File: No file chosen

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

Field	Description
Select File	Click Browse to select the firmware file.
Upload	After selecting the firmware file, click Upload to starting upgrading the firmware file.
Reset	Click it to starting selecting the firmware file.

Backup/Restore

Choose **Maintenance > Update > Backup/Restore**, and the page shown in the following figure appears. You can back up the current settings to a file and restore the settings from the file that was saved previously.

Backup/Restore Settings

Once the router is configured you can save the configuration settings to a configuration file on your hard drive. You also have the option to load configuration settings.

Save Settings to File:

Load Settings from File: No file chosen

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

Field	Description
Save Settings to File	Click it, and select the path. Then you can save the configuration file of the router.
Load Settings from File	Click Browse... to select the configuration file.
Upload	After selecting the configuration file of the router, click Upload to start uploading the configuration file of the router.

5.7.2 Password

Choose **Maintenance > Password**, the page shown in the following figure appears. By default, the user name and password are **admin** and **admin** respectively. The common user name and password are **user** and **user** respectively.

Login Details
This menu is used to add user account to access the web server of ADSL Router. Empty user name or password is not allowed.

User Name:	<input type="text"/>
Privilege:	<input type="button" value="User ▾"/>
Old Password:	<input type="text"/>
New Password:	<input type="text"/>
Confirm Password:	<input type="text"/>

Add **Modify** **Delete** **Reset**

User Account Table:

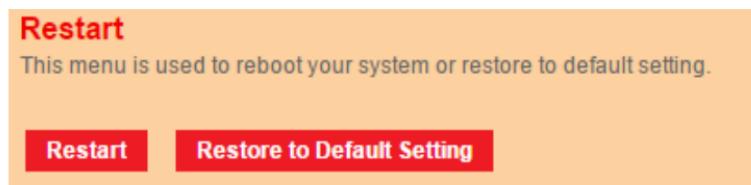
Select	User Name	Privilege
<input type="radio"/>	admin	root
<input type="radio"/>	user	user

The following table describes the parameters of this page:

Field	Description
User Name	For adding a user, you can enter a user name. For changing the privilege and password of an exist user, you can select one to be modified from User Account Table.
Privilege	Choose the privilege for the account.
Old Password	Enter the old password
New Password	Enter the password to which you want to change the old password.
Confirm Password	Enter the new password again.

5.7.3 Restart

Choose **Maintenance > Restart**, the page shown in the following figure appears.



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

Field	Description
Restart	Click it to restart the router.
Restore to Default Setting	Click it to restore to factory default settings.

5.7.4 Time

Choose **Maintenance > 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.

Date & Time Settings

This menu is used to configure the system time and Network Time Protocol(NTP) server. Here you can change the settings or view some information on the system time and NTP parameters.

System Time:	2012	Year	Jan	Month	1	Day	5	Hour	42	min	15	sec
DayLight:	LocalTIME											
Apply Changes Reset												
NTP Configuration:												
State:	<input checked="" type="radio"/> Disable <input type="radio"/> Enable											
Server:	<input type="text"/>											
Server2:	<input type="text"/>											
Interval:	Every <input type="text"/> hours											
Time Zone:	(GMT+05:30) Chennai, Kolkata, Mumbai, New Delhi											
GMT time:	Sun Jan 1 0:12:15 2012											
Apply Changes Reset												

The following table describes the parameters of this page:

Field	Description
System Time	Set the system time manually.
NTP Configuration	
State	Select enable or disable NTP function. You need to enable NTP if you want to configure the parameters of NTP.
Server	Set the primary NTP server manually.
Server2	Set the secondary NTP server manually.
Time Zone	Choose the time zone in which area you are from the drop down list.

5.7.5 System Log

Choose **Maintenance > Log**, and the page shown in the following figure appears. In this page, you can enable or disable system log function and view the system log.

Log Setting

This menu is used to display the system event log table. By checking Error or Notice (or both)will set the log flag. By clicking the ">>!", it will display the newest log information below.

Log Setting interface screenshot showing the configuration and display of system event logs.

Configuration:

- Error:
- Notice:
- Buttons: Apply Changes, Reset

Event log Table:

- Buttons: Save Log to File, Clean Log Table
- Navigation: Old, <<, <, >, >>, New

Time	Index	Type	Log Information
Page: 1/1			

5.7.6 Diagnostics Tools

5.7.6.1 Ping

Choose **Diagnostics Tools > Ping**, and the page shown in the following figure appears.

Ping Diagnostic interface screenshot showing the parameters for a ping operation.

Fields:

- Host:
- Interface:

Buttons:

- PING

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

Field	Description
Host	Enter the valid IP address or domain name.
Interface	Select interface from drop-down list.
Ping	Click it to start to Ping the IP address.

5.7.6.2 Ping6

Choose **Diagnostics Tools > Ping6**, and the page shown in the following figure appears.

Ping6 Diagnostic

Host:	<input type="text"/>
Interface:	<input type="button" value="▼"/>
PING	

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

Field	Description
Host	Enter the valid IP address or domain name.
Interface	Select interface from drop-down list.
Ping	Click it to start to Ping the IP address.

5.7.6.3 Traceroute

Choose **Diagnostics Tools > Traceroute**, and the following page appears. By Traceroute Diagnostic, you can track the route path through the information which is from your computer to the Internet other side host.

Traceroute Diagnostic

Host :	<input type="text"/>	NumberOfTries :	<input type="text" value="3"/>
Timeout :	<input type="text" value="5000"/> ms	Datasize :	<input type="text" value="38"/> Bytes
DSCP :	<input type="text" value="0"/>	MaxHopCount :	<input type="text" value="30"/>
Interface :	<input type="button" value="any"/>		
traceroute		Show Result	

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

Field	Description
Host	Enter the destination host address for diagnosis.

NumberOfTries	Number of repetitions.
Timeout	Put in the timeout value.
Datasize	Packet size.
DSCP	Differentiated Services Code Point, You should set a value between 0-63.
MaxHopCount	Maximum number of routes.
Interface	Select the interface.
traceroute	Click it to start traceroute.

5.7.6.4 Traceroute6

Choose **Diagnostics Tools > Traceroute6**, and the following page appears. By Traceroute Diagnostic, you can track the route path through the information which is from your computer to the Internet other side host.

Traceroute6 Diagnostic

Host :	<input type="text"/>	NumberOfTries :	<input type="text" value="3"/>
Timeout :	<input type="text" value="5000"/> ms	Datasize :	<input type="text" value="38"/> Bytes
MaxHopCount :	<input type="text" value="30"/>	Interface :	<input type="button" value="any"/>
<input type="button" value="traceroute"/> <input type="button" value="Show Result"/>			

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

Field	Description
Host	Enter the destination host address for diagnosis.
NumberOfTries	Number of repetitions.
Timeout	Put in the timeout value.
Datasize	Packet size.
MaxHopCount	Maximum number of routes.

Interface	Select the interface.
traceroute	Click it to start traceroute.

5.7.6.5 OAM Loopback

Choose **Diagnostics Tools > OAM Loopback**. The page shown in the following figure appears. In this page, you can use VCC loopback function to check the connectivity of the VCC. The ATM loopback test is useful for troubleshooting problems with the DSLAM and ATM network.

OAM Fault Management - Connectivity Verification
Connectivity verification is supported by the use of the OAM loopback capability for both VP and VC connections. This menu is used to perform the VCC loopback function to check the connectivity of the VCC.

Flow Type:

F5 Segment

F5 End-to-End

F4 Segment

F4 End-to-End

VPI:

VCt:

Go!

Click **Go!** to start testing.

5.7.6.6 ADSL Diagnostic

Choose **Diagnostics Tools > ADSL Diagnostic**. The page shown in the following figure appears. It is used for ADSL tone diagnostics.

Diagnostic ADSL		Downstream		Upstream					
Add Tone Diagnostic									
		Start							
Hlin Scale									
Loop Attenuation(dB)									
Signal Attenuation(dB)									
SNR Margin(dB)									
Attainable Rate(Kbps)									
Output Power(dBm)									
Tone Number		H.Real	H.Image	SNR	QLN				
0					Hlog				
1									
2									
3									
4									

Click **Start** to start ADSL tone diagnostics.

5.7.6.7 Diag-Test

Choose **Diagnostics > Diag-Test**, the page shown in the following figure appears. In this page, you can test the DSL connection. You can also view the LAN status connection and ADSL connection.

Diagnostic Test

The Router is capable of testing your WAN 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.

Select the Internet Connection: <input type="button" value="pppoe1 ▾"/>	<input type="button" value="Run Diagnostic Test"/>
---	--

Click **Run Diagnostic Test** to start testing

Appendix A: Specifications

General	
Standards	Complies with IEEE 802.11b, IEEE 802.11g, IEEE 802.11n & IEEE 802.3, IEEE 802.3u standards
Protocols	ANSI T1.413, ITU G.992.1, ITU G.992.2, ITU G.992.3, ITU G.992.5,
Protocols	TCP/IP, PPPoA, PPPoE, SNTP, HTTP, DHCP, ICMP, NAT
Ports	2- 10/100M Auto-Negotiation RJ45 LAN Ports (Auto MDI/MDIX) , 1- RJ11 (WAN) Port
LEDs	PWR, ADSL, Internet, WLAN, LAN ports
Network Medium	10Base-T: UTP category 3, 4, 5 cable 100Base-TX: UTP category-5 Max line length: 6.5Km
Data Rates	Downstream: Up to 24Mbps Upstream: Up to 3.5Mbps (With Annex M enabled)
WPS	WPS button
WiFi	Wi-Fi ON/OFF button
Reset button	Factory default
Safety & Emission	FCC, CE
Power	12V DC, 0.5A
System Requirement	Internet Explorer 5.20 or later, Netscape Navigator 6.0 or later Win 9x/ ME/ 2000/ XP/ Vista/Windows 7
Wireless	
Frequency Band	2.412~2.462GHz

Radio Data Rate	11n: up to 150Mbps (Automatic) 11g: 54/48/36/24/18/12/9/6Mbps (Automatic) 11b: 11/5.5/2/1Mbps (Automatic)
Frequency Expansion	DSSS(Direct Sequence Spread Spectrum)
Modulation	DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM
Security	WEP/WPA/WPA2/WPA2-PSK/WPA-PSK

Physical and Environment

Working Temperature	0% ~ 40%
Working Humidity	10% ~ 90% RH (non-condensing)
Storage Temperature	-40% ~ 70%
Storage Humidity	5% ~ 90% RH (non-condensing)