DG-BG4300NU

300Mbps Wireless ADSL2/2+

Broadband Router with USB port

User Manual

V4.0

2016-12-22

As our products undergo continuous development the specifications are subject to change without prior notice

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Trademarks:

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

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1 Product Information

Thank you for purchasing DG-BG4300NU 300Mbps Wireless ADSL2/2+ Broadband Router with USB port! This router is the best choice for Small office / Home office users, all computers and network devices can share a single Internet connection at high speed. Easy Installation wizard provided with this router is designed to setup an Internet connection in a very short time by accessing the web configuration of the router. With its wireless speed up to 300Mbps users can experience uninterrupted Internet and multimedia access.

Other features of this wireless broadband router include:

- High Internet Access throughput. Downstream up to 24 Mbps and Upstream up to 1 Mbps.
- Wireless speed up to 300Mbps.
- Robust WLAN Security.
- Supports URL blocking & Firewall.
- Dedicated WPS and WLAN push button.
- Dynamic DNS and VPN Pass through support.
- USB2.0 Port for 3G Dongle & Mass Storage.
- Allows multiple users to share a single ADSL internet connection.
- Access private LAN servers from the Internet.
- Four wired LAN ports (10/100M) and one WAN port (RJ-11).
- Works with IEEE 802.11b/g/n wireless LAN devices.
- Supports IPv6.
- Supports DHCP (Server/Client) for easy IP-address setup.

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1.1 Safety Precautions

In order to keep the safety of users and your properties, please follow the safety instructions as mentioned below:

1. This router is designed for indoor use only; **DO NOT** place this router outdoor.
2. **DO NOT** place this router close to a hot or humid area, like kitchen or bathroom. Also, **DO NOT** leave this router in the car during summer.
3. **DO NOT** pull any connected cable with force; disconnect it from the router first.
4. If you want to place this Router at a height or mount on the wall, please make sure it is firmly secured. Falling from a height would damage the router and its accessories and warranty will be void.
5. Accessories of this router, like antenna and power supply, are dangerous to small children. **KEEP THIS ROUTER OUT OF REACH OF CHILDREN.**
6. The Router will get heated up when used for a long time (This is normal and is not a malfunction). **DO NOT** put this Router on paper, cloth, or other flammable materials.
7. There's no user-serviceable part inside the router. If you find that the router is not working properly, please contact your dealer of purchase and ask for help. **DO NOT** disassemble the router, warranty will be void.
8. If the router falls into water when it's powered, **DO NOT** use your hands to pick it up. Switch the electrical power off before you do anything, or contact an experienced electrical technician for help.
9. If you smell something strange, or even see some smoke coming out from the router or power supply, remove the power supply or switch the electrical power off immediately, and call the dealer of purchase for help.

1.2 System Requirements

The following system requirements are recommended:

- Notebook or desktop PC with network adapter (wired/WLAN)
- Windows 98/Me/2000/XP/Vista
- Web browser
- AC power socket (100 – 240 V, 50/60Hz)

1.3 Package contents

Before you start using this router, please check if there's anything missing in the package, and contact your dealer of purchase to claim for missing items:

- DG-BG4300NU ADSL 2/2+ Broadband Router With 3G
- POTS splitter
- AC power adapter
- Quick Installation Guide
- Installation Guide CD (includes user manual, QIG & Utility)
- Patch cord (1 No.)
- RJ-11 cables (2 Nos.)

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1.4 LEDs and Interfaces

Top Panel

The following table describes the LEDs of the device.

LEDs	Color	Status	Description
Power	Red	On	Device is initializing or initialization has failed.
		Off	Power is off.
	Green	On	Power is on.
DSL	Green	On	Physical link is up
		Blinking	ADSL handshaking process is on or ADSL line unplugged.
Internet	Green	On	Internet connection is established.
		Blinking	Data is being transmitted or received.
		Off	Device is not connected to internet.
	Red	On	PPPoE/PPPoA username-password not set or wrong.
LAN 1/2/3/4	Green	On	PC is connected to the LAN port
		Off	PC is unplugged/not connected.
USB	Green	On	USB device is plugged.

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		Off	USB device is not plugged.
WLAN	Green	On	Wireless is enabled.
		Blinking	Data is being transmitted or received.
		Off	Wireless is not enabled.
WPS	Green	Blinking	WPS negotiation is enabled waiting for the clients.
		Off	WPS negotiation is not enabled on the device.

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Rear Panel

The following table describes the interfaces of the device.

Item	Description
Antennas	Two 5dBi fixed dipole antennas.
DSL	RJ-11 interface, for connecting to the ADSL interface or a splitter using a telephone cable.
LAN4/3/2/1	RJ-45 interface, for connecting to the Ethernet interface of a computer or the Ethernet devices through an Ethernet cable/LAN Cable.
Power	Power interface, for connecting to the power adapter.
ON / OFF	Power switch, to power on or power off the device.

Side Panel

Item	Description
USB	To connect USB 3G Dongle or USB Mass Storage.
Reset	Reset to the factory default configuration. Keep the device powered on, and insert a pin into the reset hole for 3 seconds, then release it. The device will reset to the factory default configuration.

2 Hardware Installation

- Connect the ADSL interface of the device and the router interface of the splitter through a telephone cable. Connect the phone to the Phone interface of the splitter through a telephone cable. Connect the incoming line to the Line interface of the splitter.

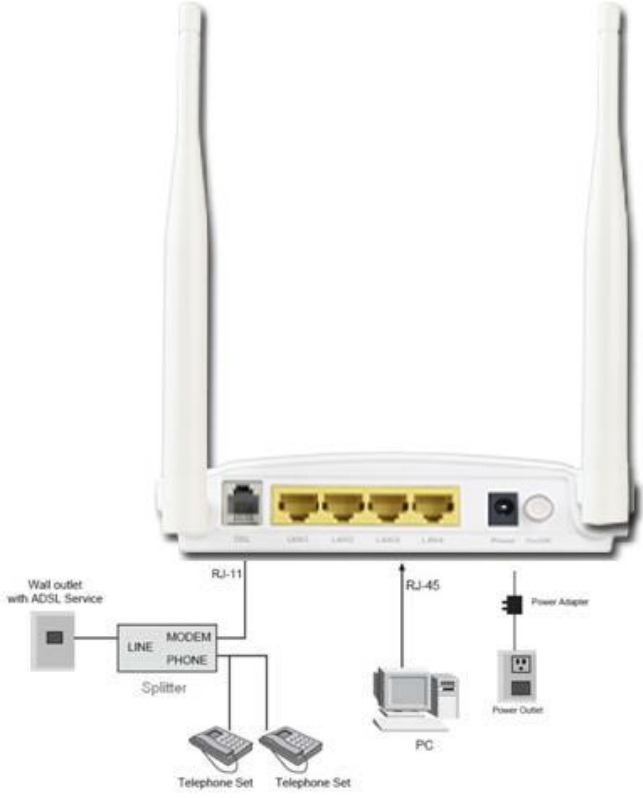
The splitter has three interfaces:

- Line: Connect to a wall phone jack (RJ-11 jack).
- Modem: Connect to the ADSL jack of the device.
- Phone: Connect to a telephone set.
- Connect the LAN interface of the device to the network card of the PC through an Ethernet cable (MDI/MDIX).

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

- Plug one end of the power adapter to the wall outlet and the other end to the Power interface of the device.

The following figure shows the application diagram for the connection of the router, PC, splitter and the telephone sets.



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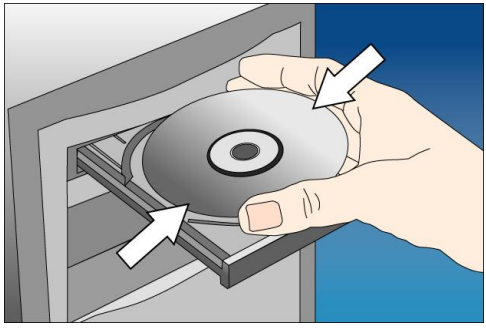
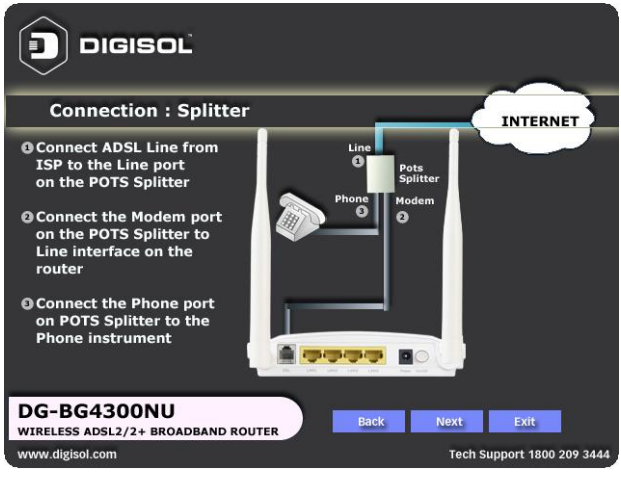
3 Software Installation

- Insert the Setup CD into your CD-ROM drive of notebook/desktop computer.

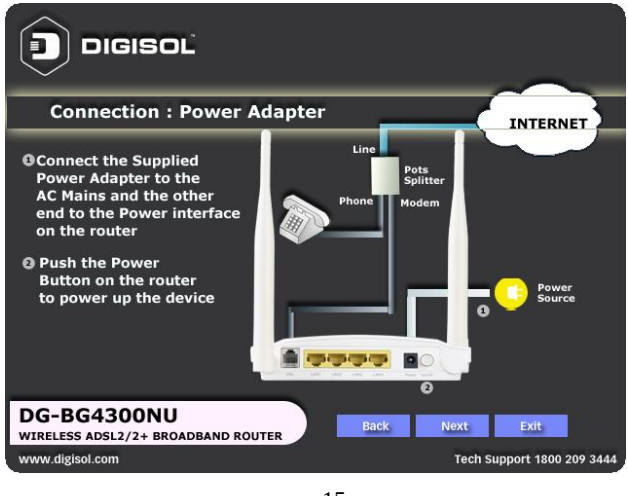


- Explore the CD and execute the "**India_autorun.EXE**" file. Screen given below will be displayed. Click '**Start**' to continue.

- Connect the ADSL line and the phone line to the router. Click '**Next**'.

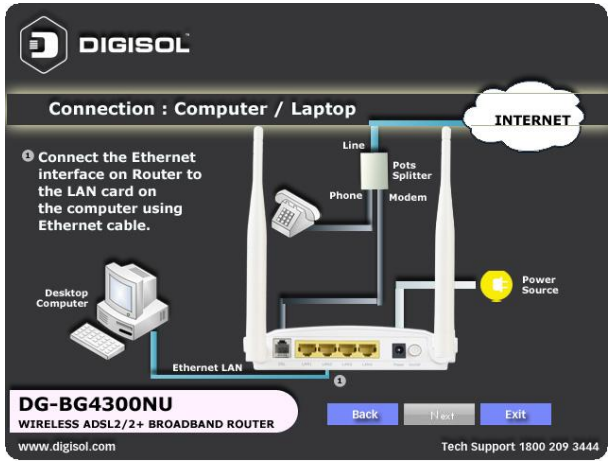


- Connect the power adapter to the AC Mains and the other end to the power interface on the router. Push the power button on the router to power up the device. Click '**Next**'.



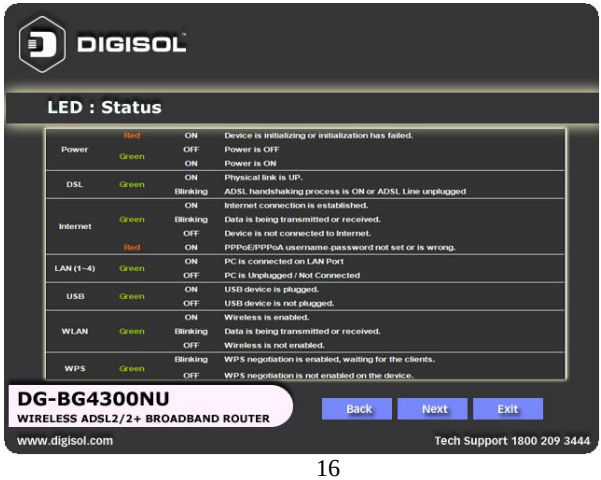
- Connect the Ethernet interface on the router to the LAN card on the computer using the Ethernet cable.

  Click '**Next**'.

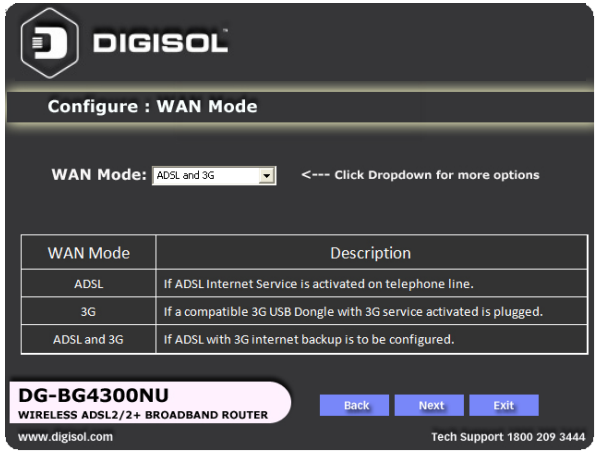


- After powering up the router, verify the status of the LED indicators on the front panel of the router.

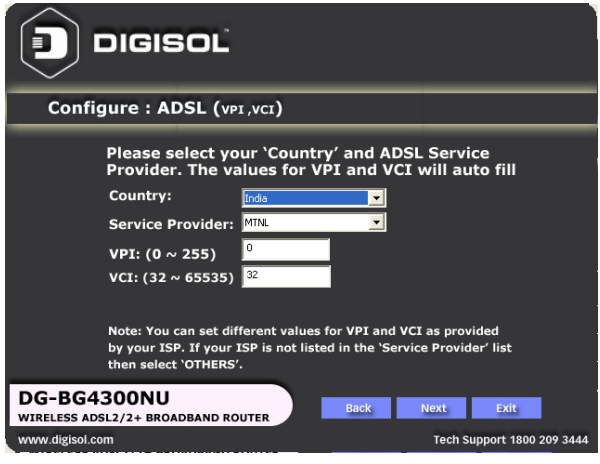
  Click '**Next**'.



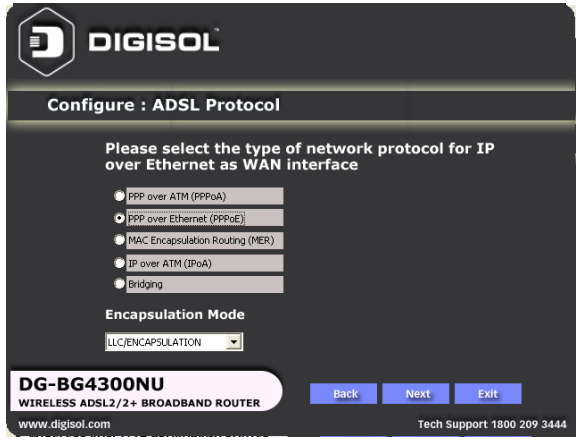
- Below as shown please select the "WAN Mode" type. Suppose you select "ADSL and 3G" option to setup 3G failover click "**Next**".



- Please select your 'Country' and ADSL service provider. VPI and VCI values will auto fill.



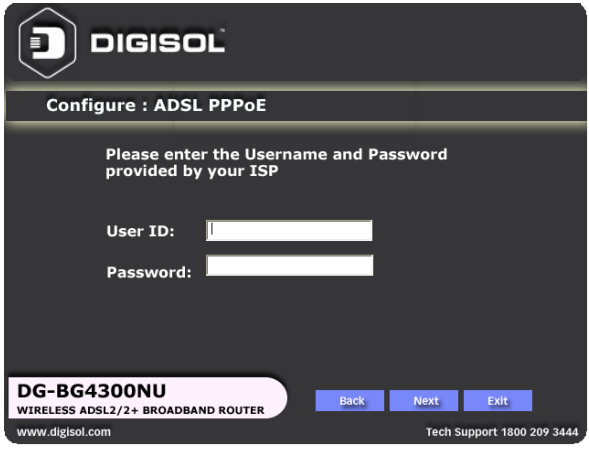
- Select the network protocol for WAN interface. Click '**Next**'.



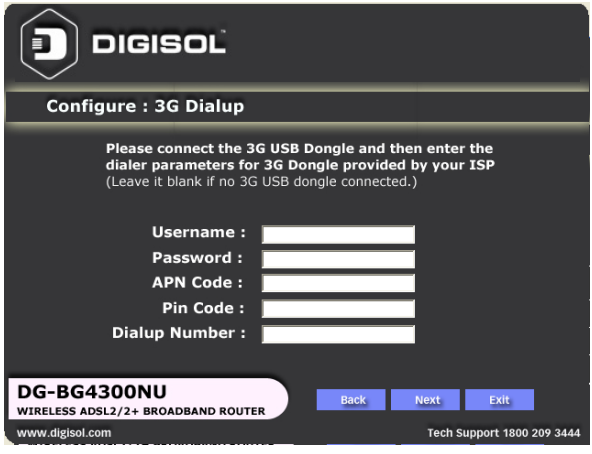
All the utility installation steps till here are the common steps to be followed for the modes.

Following are the steps for configuring ***PPPoE connection*:**

- Enter the username and password provided by your ISP. Click '**Next**'.



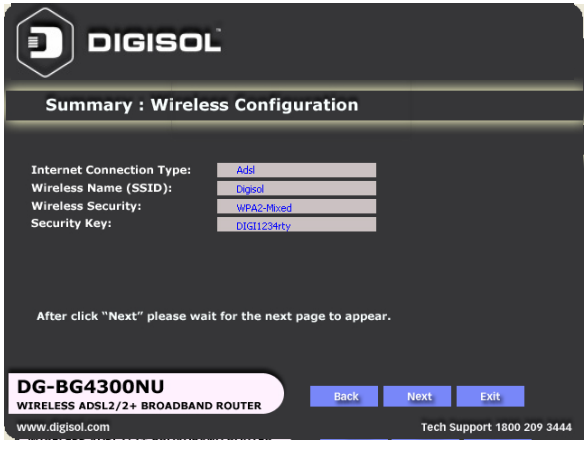
- Configure the 3G Dialup parameters and click "**Next**"



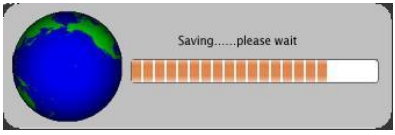
- Configure a wireless name (SSID) for your router. Click '**Next**'.

- Configure the wireless security. Click '**Next**'.

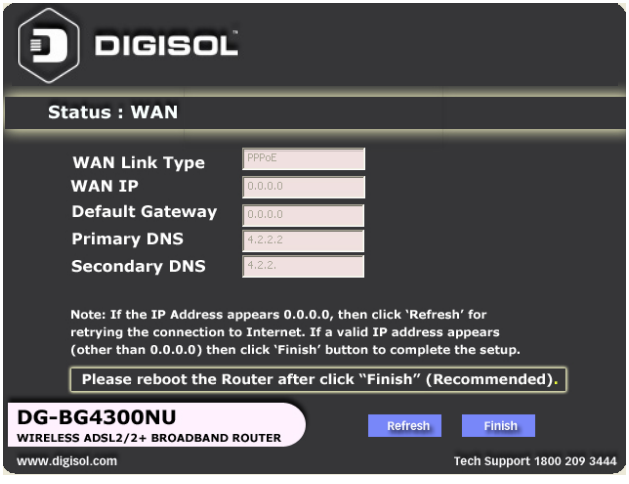
- The next screen is a summary of the wireless settings of the router.



- Click on 'Next', the following screen will appear.

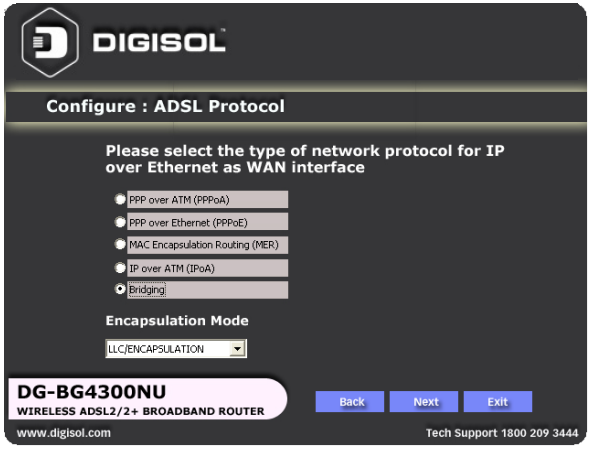


- Once the connection is established, the router connection status will appear.



Bridging Mode:

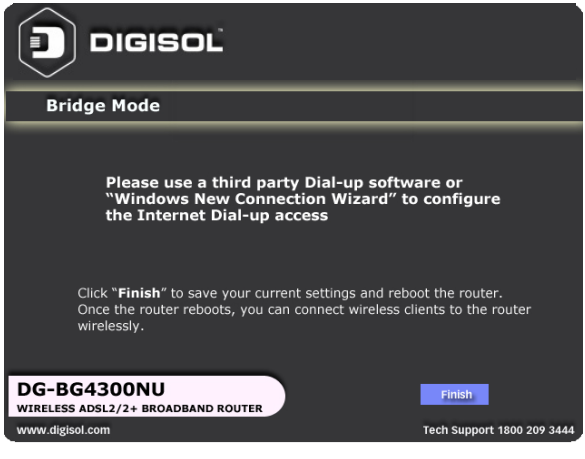
- To configure the router in the bridge mode select "Bridging" option. Click '**Next**'.



- Configure a wireless name (SSID) for your router. Click '**Next**'.

- Configure the wireless security.

- Click on '**Next**' the following screen will appear.



- Click on '**Finish**' to complete the configuration of the router in Bridge mode.

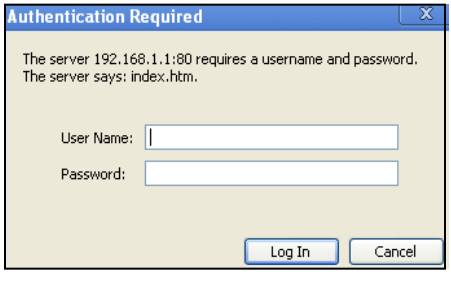
4 About the Web Configuration

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

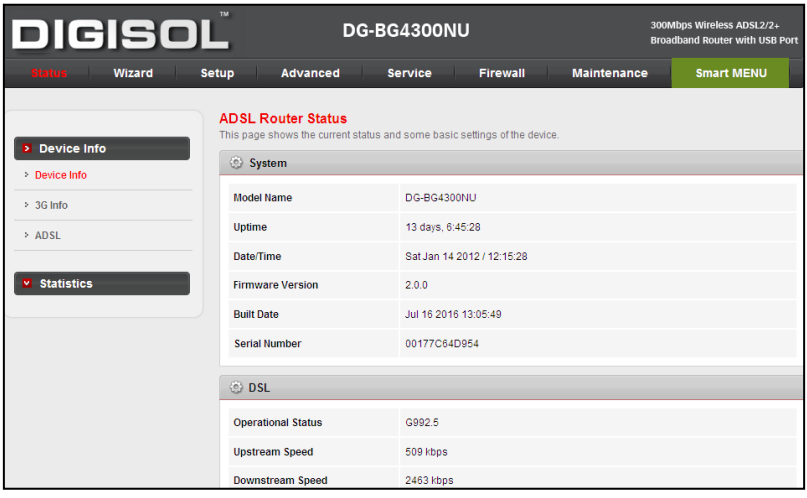
4.1 Access the Router

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

- Open the Internet Explorer (IE) browser and enter http://192.168.1.1.
- In the Login page that is displayed, enter the username and password.
- The username and password of the superuser are admin and admin.
- The username and password of the common user are user and user.



If you log in as a super user, the page shown in the following figure appears. You can check, configure and modify all the settings.



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

Note: In the Web configuration page, you can click Apply Changes to save the settings.

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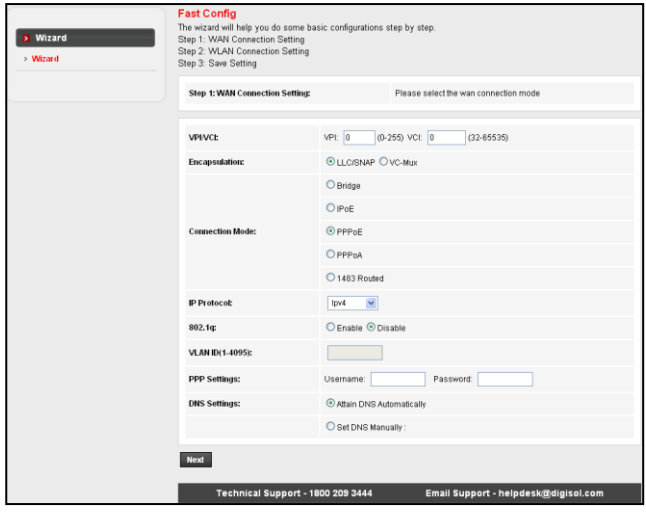
4.2 Wizard

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

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



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

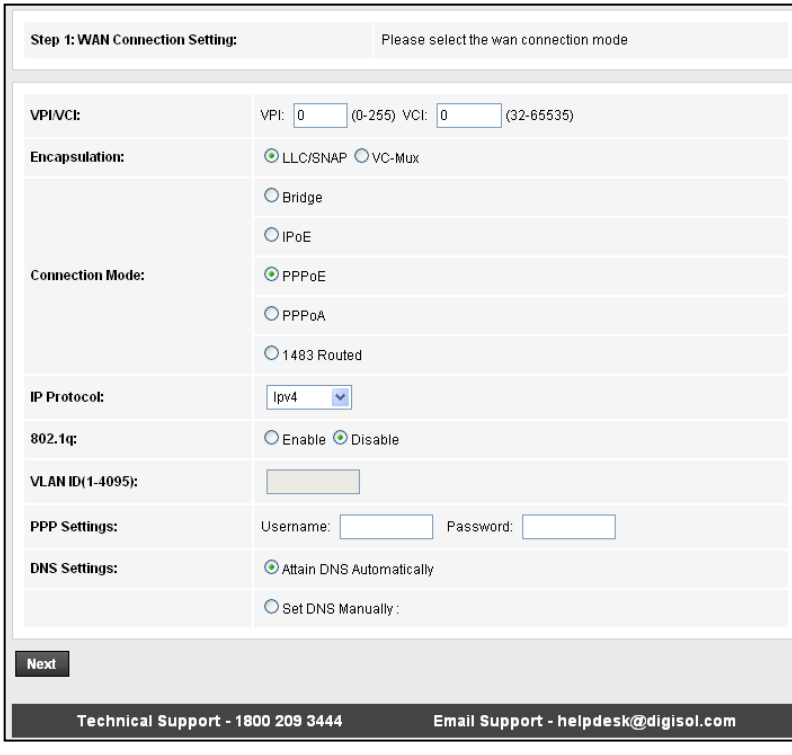
Field	Description
	your ISP. By default, VPI is set to 0.
VCI	Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is in the range of 32 to 65535. (0 to 31 is reserved for local management of ATM traffic) Enter the correct VCI provided by your ISP. By default, VCI is set to 35.

After the setting is done, click **Next**, the page as shown in the following figure appears.

There are three WAN connection types: PPP over ATM (PPPoA), PPP over Ethernet (PPPoE) and1483 Routed. The below mentioned topics describe the modes.

PPPoE/PPPoA

In the Connection Type page, set the WAN connection type to PPP over Ethernet (PPPoE), the encapsulation mode to LLC/SNAP.



The following table describes the parameters in this page:

Field	Description
Connection Mode	There are three WAN connection types: PPP over ATM (PPPoA), PPP over Ethernet (PPPoE) and 1483 Routed. In

Field	Description
	this example, the connection type is set to PPPoE.
Encapsulation Mode	You can select LLC/SNAP or VC-Mux. In this example, the encapsulation mode is set to LLC/SNAP.
IP Protocol	Select the IMP protocol: IPv4, IPv6 or IPv4/IPv6.
802.1q	You can enable or disable 802.1q
VLAN ID (1-4095)	Enter the VLAN ID here. The valid range is 1-4095.
PPP Settings	Enter the username and password.
DNS Settings	Select the DNS settings.

After the settings are done, click **Next**, the page as shown in the following figure appears.

The following table describes the parameters in this page:

Field	Description
WLAN	You can enable or disable the WLAN.
Band	Here select the appropriate band form the list.
SSID	Enter the SSID.
Encryption	Select the encryption from the list.

After the settings are done, click **Next**, the page as shown in the following figure appears.

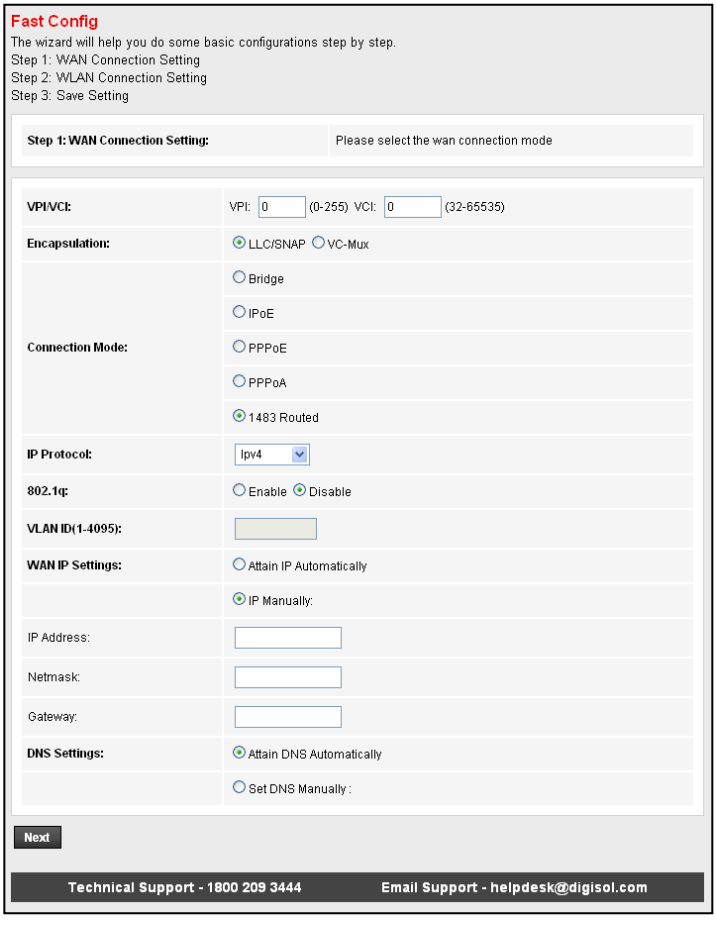
If you need finish settings in the fast config, please click "**Apply Changes**" otherwise please click "Cancel" or " Prev".

Note:

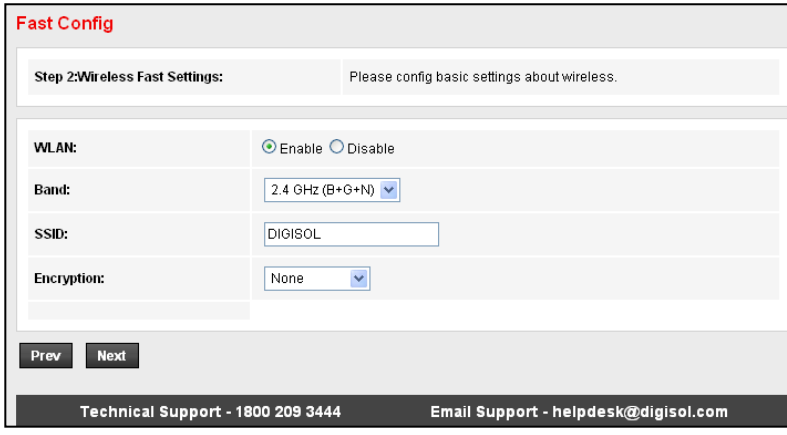
If the WAN connection type is set to PPPoA, the parameters of the WAN connection type are the same as that of PPPoE.

1483 Routed

In the Connection Type page, set the WAN connection type to 1483 Routed, the encapsulation mode to LLC/SNAP.



After the settings are done, click **Next**, the page as shown in the following figure appears.



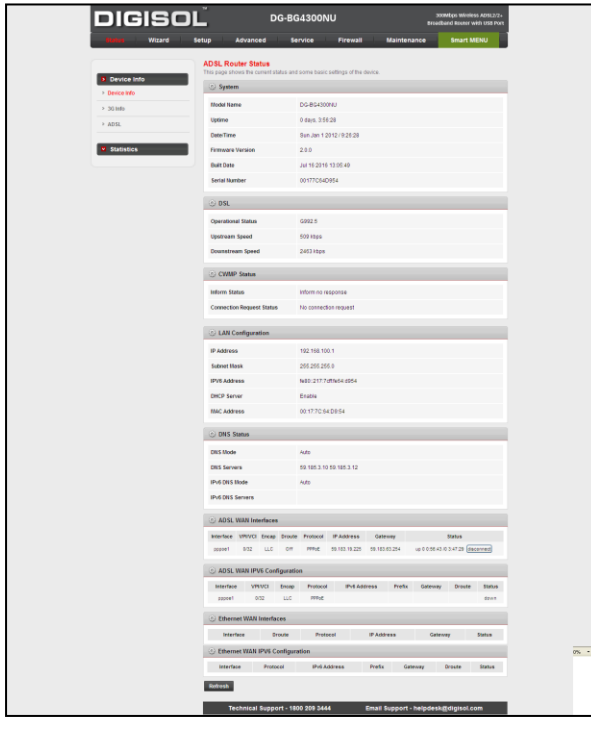
For subsequent configuration, refer to the description in the above section PPPoE/PPPoA.

4.3 Status

In the navigation bar, choose Status. The Status page that is displayed contains: Device Info, 3G Info and ADSL.

Device Info

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

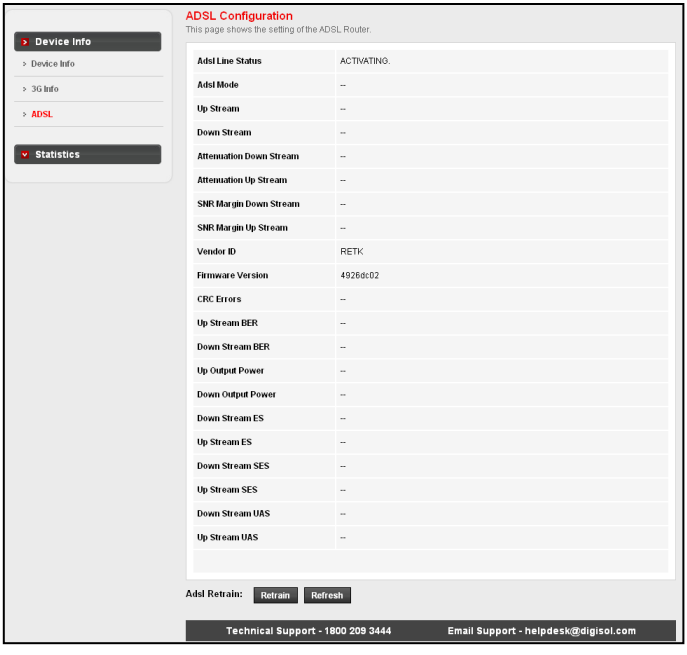


3G Info

Choose **Status** > **3G Info**. This page shows the Signal strength, Connection status, SIM card status, IP address details of 3G etc.

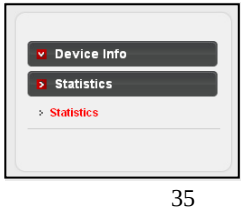
ADSL

This page shows the settings of the ADSL Router.



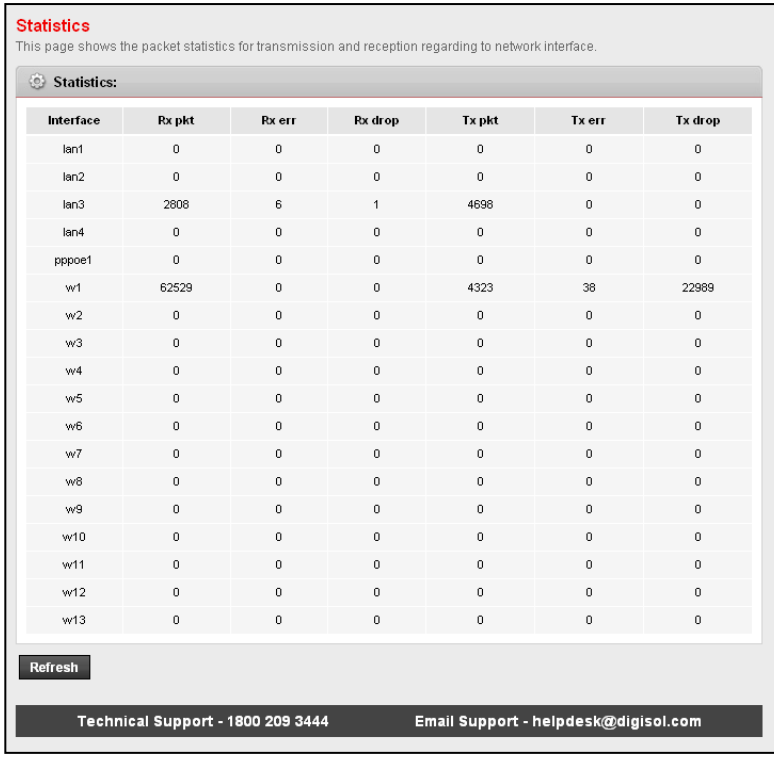
Statistics

Choose **Status** > **Statistics**.



4.3.1.1 Statistics

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



Statistics

This page 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	2808	6	1	4698	0	0
lan4	0	0	0	0	0	0
pppoe1	0	0	0	0	0	0
w1	62529	0	0	4323	38	22989
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

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4.4 Setup

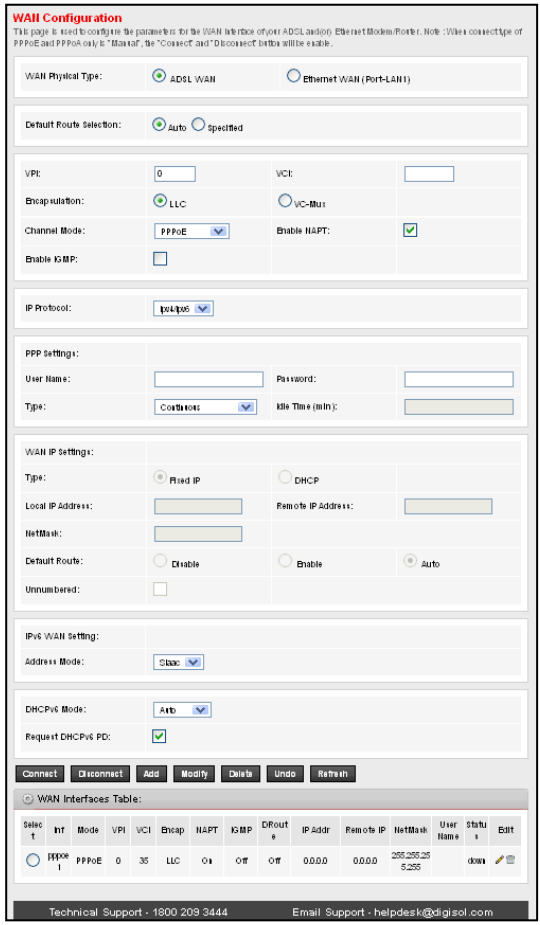
In the navigation bar, click **Network**. The Network page that is displayed contains WAN, LAN and Wireless.

WAN

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

4.4.1.1 WAN

Click **WAN** in the left pane, the page shown in the following figure appears. In this page, you can configure WAN interface of your router.



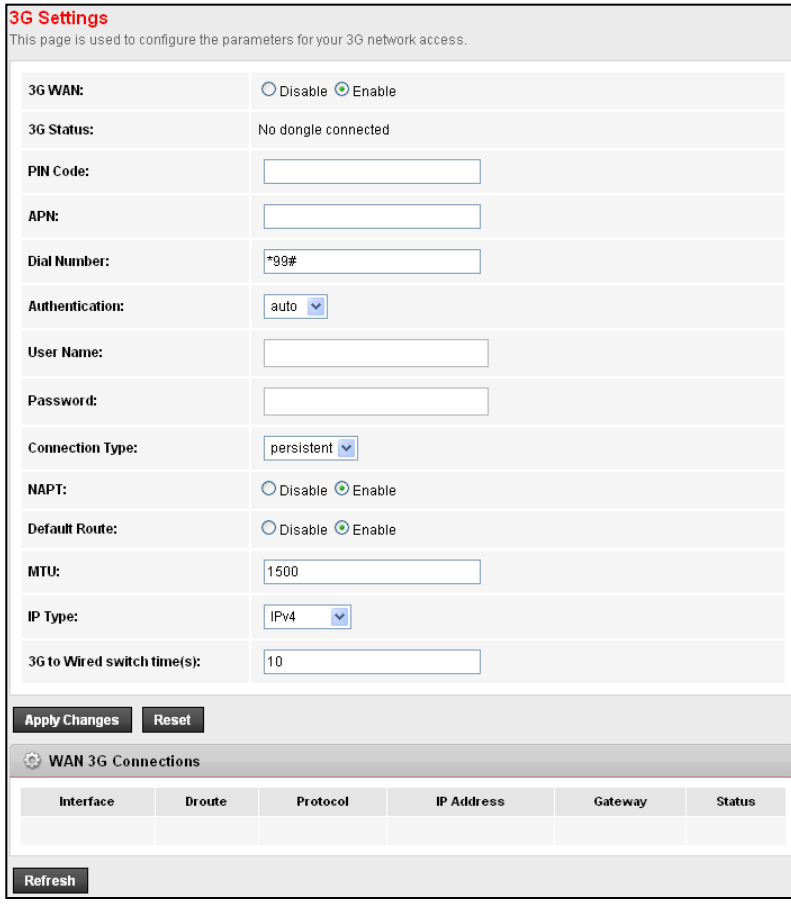
The following table describes the parameters of this page:

Field	Description
WAN physical type: Ethernet WAN (Port-LAN1)	When this option is selected the unit will auto reboot.
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 PPPoE, PPPoA and 1483 Routed.
Enable NAPT	Select it to enable Network Address Port Translation (NAPT) function. If you do not select it and you want to access the Internet normally, you must add a route on the uplink equipment. Otherwise, the access to the Internet fails. Normally, it is enabled.
Enable IGMP	You can enable or disable Internet Group Management Protocol (IGMP) function.
PPP Settings	
User Name	Enter the correct user name for PPP dial-up, which is provided by your ISP.
Password	Enter the correct password for PPP dial-up, which is provided by your ISP.
Type	You can choose Continuous, Connect on Demand, or Manual.
Idle Time (min)	If set the type to 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.
WAN IP Settings	
Type	You can choose Fixed IP or DHCP. ● If selected Fixed IP, you should enter the local IP address, remote IP address and subnet mask.

	• If selected DHCP, the router is a DHCP client, 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.
Remote IP Address	Enter the remote IP address.
Net mask	Enter the subnet mask of the local IP address.
Unnumbered	Select this checkbox to enable IP unnumbered function.
Default Route	Enable/Disable the default route.
Add	After configuring the parameters of this page, click it to add a new PVC into the Current ATM VC Table.
Modify	Select PVC in the Current ATM VC Table, then modify the parameters of this PVC. After finishing, click it to apply the settings of this PVC.
Delete	Select PVC in the Current ATM VC Table, then delete the PVC.
Reset	Click reset to undo the settings entered in this page and retain them to default settings.
Current ATM VC Table	This table shows the existing PVCs. It shows the interface name, channel mode, VPI/VCI, encapsulation mode, local IP address, remote IP address and other information. The maximum item of this table is eight.

4.4.1.2 3G

This page is used to configure the parameters for your 3G network access.



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Field	Description
3G WAN (Enable/Disable)	Selection will Enable or Disable 3G WAN.
Pincode	Enter the Pincode – Check with 3G Service provider.
APN	Enter the APN - Check with 3G Service provider.
Dial Number	Enter the dial number eg: *99#,#777 etc as per ISP.
Username	Enter username – Check with 3G service provider.
Password	Enter password – Check with 3G service provider.
Connection type	Persistent means Automatic dial & Manual means manual dial.
NAPT	WAN IP/Port sharing (Network Address Port Translation)
Default Route	Enable or Disable Default route. Router will select the default route to internet.
MTU	Set as per 3G Service provider (Do not modify).
IP Type	Select the IMP type: IPv4, IPv6 or IPv4/IPv6.
3G to wired switch time	Set the switch over time in seconds.

Note: Kindly refer to the 3G USB compatibility list uploaded on the website.

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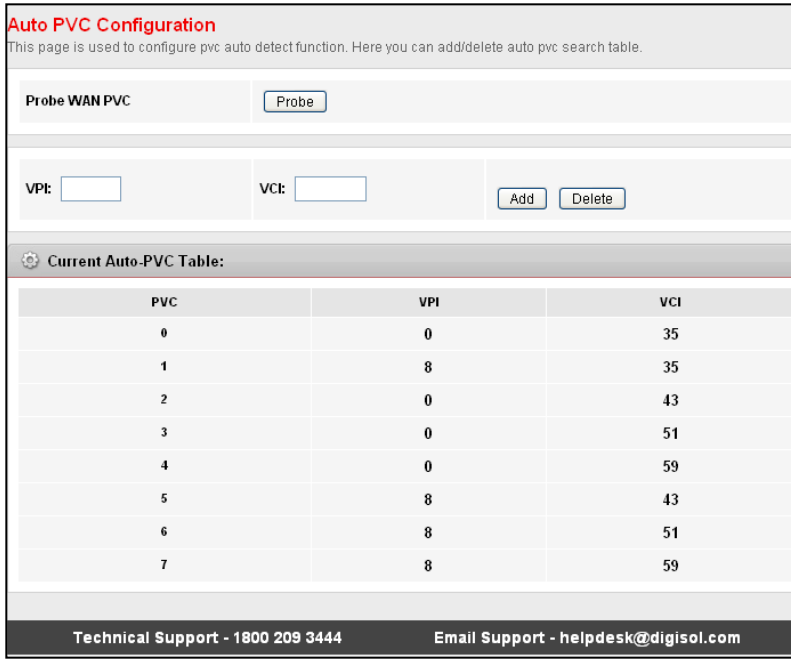
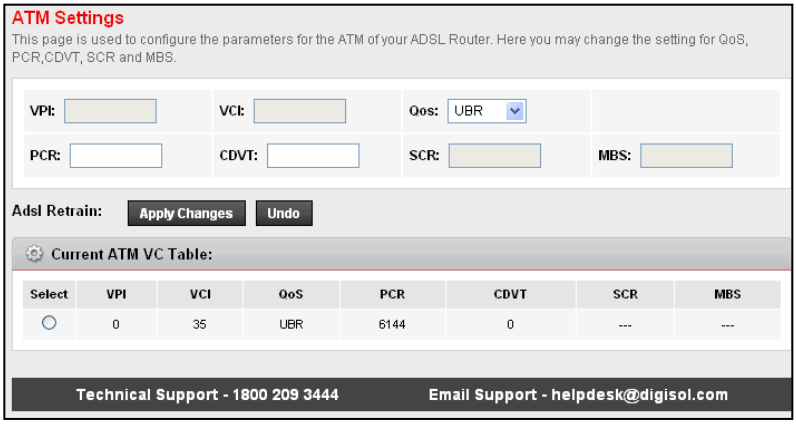
4.4.1.3 Auto PVC

Click **Auto PVC** in the left pane, page shown in the following figure appears. In this page, you can get PVC automatically through detecting function, and add or delete the PVC that you want or do not want.



4.4.1.4 ATM Settings

Click **ATM Settings** in the left pane, the page shown in the following figure appears. In this page, you can configure the parameters of the ATM, including VPI, VCI, QoS, PCR, CDVT, SCR and MBS.



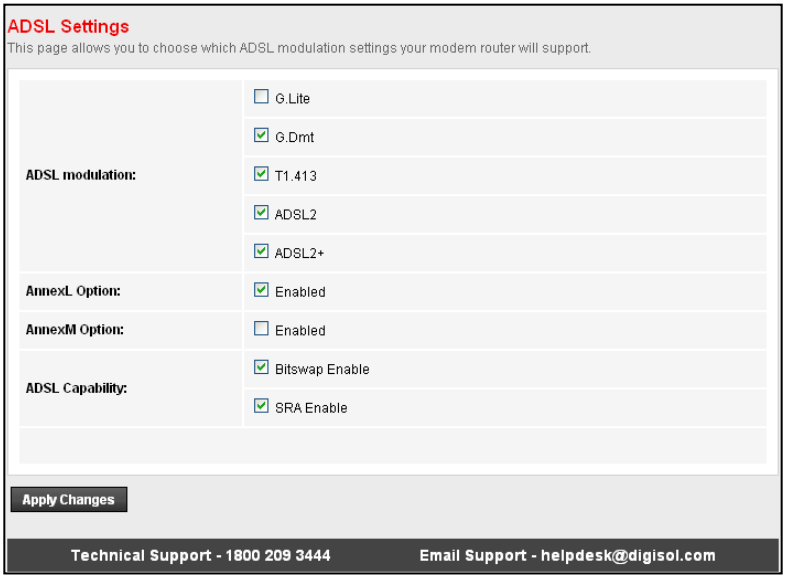
The following table describes the parameters of this page:

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	Sustained cell rate (SCR) is the maximum rate that traffic can pass over

	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.

4.4.1.5 ADSL Settings

Click **ADSL Settings** in the left pane, the page shown in the following figure appears. In this page, you can select the ADSL modulation. Mostly, try to retain the factory default settings. The router supports these modulations: G.Lite, G.Dmt, T1.413, ADSL2 and ADSL2+. The router negotiates the modulation modes with the DSLAM.

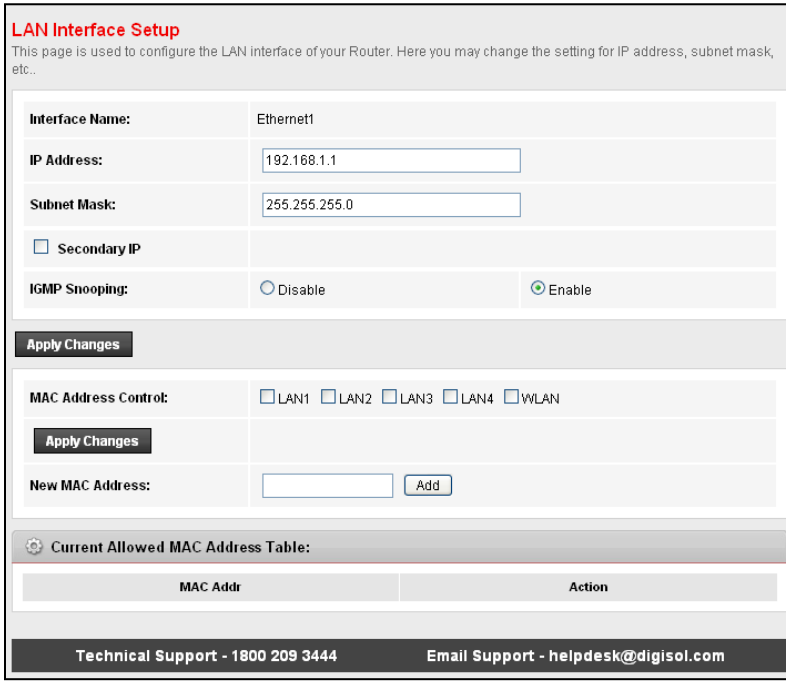


Choose **Network > LAN**. The LAN page that is displayed contains LAN IP, DHCP and DHCP Static IP.

4.4.1.6 LAN

Click **LAN IP** in the left pane, the page shown in the following figure appears.

In this page, you can change the IP address of the router. The default IP address is 192.168.1.1, which is the private IP address of the router.



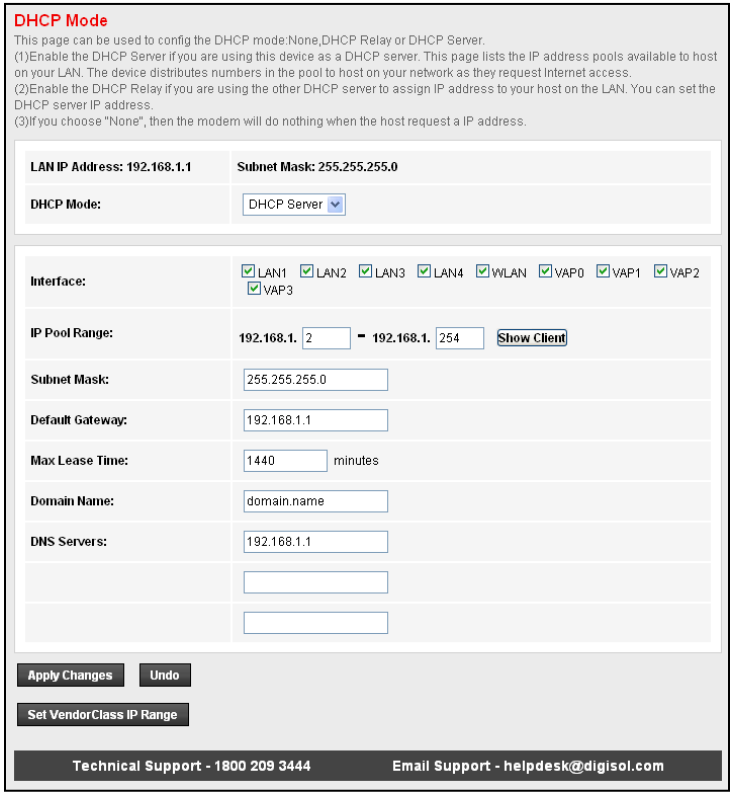
The following table describes the parameters of this page:

Field	Description
IP Address	Enter the IP address of LAN interface. It is recommended to use an address from a block that is reserved for private use. This address block for example is 192.168.1.1 - 192.168.1.254.
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 different networks.
IGMP Snooping	When IGMP snooping is enabled, only hosts that belong to the group receive the multicast packets. If a host is deleted from the group, the host cannot receive the multicast packets any more.
MAC Address Control	It is the access control based on MAC address. Select it, and the host whose MAC address is listed in the Current Allowed MAC Address table can access the router.
Add	Enter MAC address and then click it to add a new MAC address.
Current allowed MAC address table	All the allowed MAC addresses added will be listed here.

4.4.1.7 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 DHCP server (DHCP Relay) where it relays IP address assignment from an actual real DHCP server to clients. You can enable or disable DHCP server.

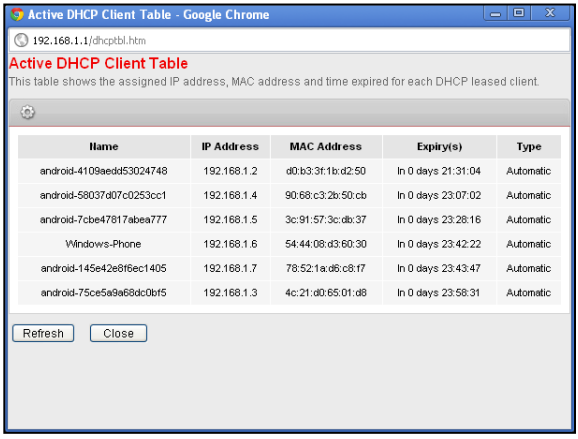
Click **DHCP** in the left pane, the page shown in the following figure appears.



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 IP address that is 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.
Subnet Mask	Enter the subnet mask here.
Default Gateway	Enter the default gateway of the IP address pool.
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 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.



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 characters, for example, 00-17-7C-00-02-12.

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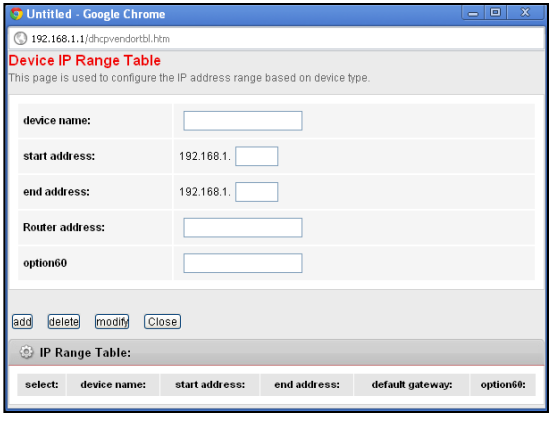
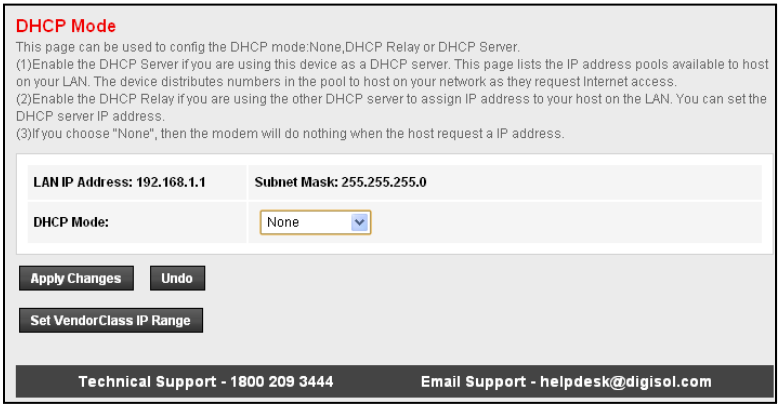
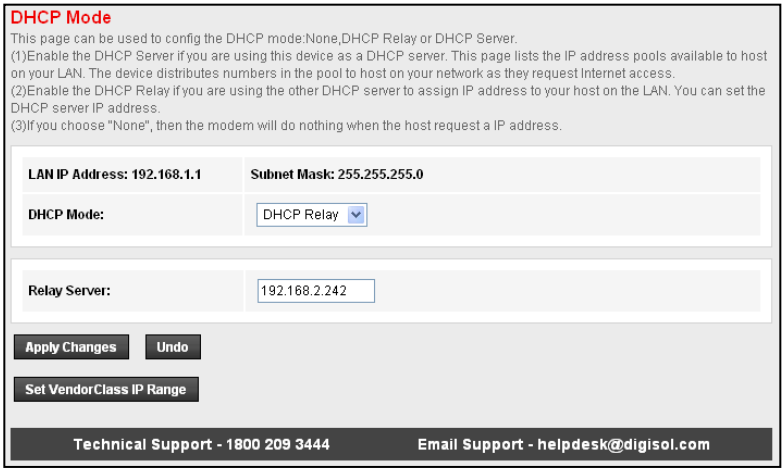
Click **Set VendorClass IP Range** in the **DHCP Mode** page, the page as shown in the following figure appears. In this page, you can configure the IP address range based on the device type.



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



In the **DHCP Modefield**, choose **DHCPRelay**. The page shown in the following figure appears.

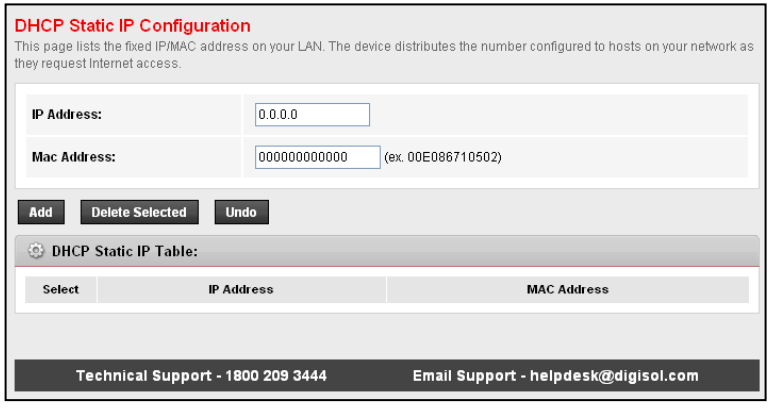


The following table describes the parameters and buttons of this page:

Field	Description
DHCP Mode	If set to DHCP Relay, the router acts a 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.
Undo	Click it to refresh this page.

4.4.1.8 DHCP Static

Click **DHCP Static IP** in the left pane, 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.

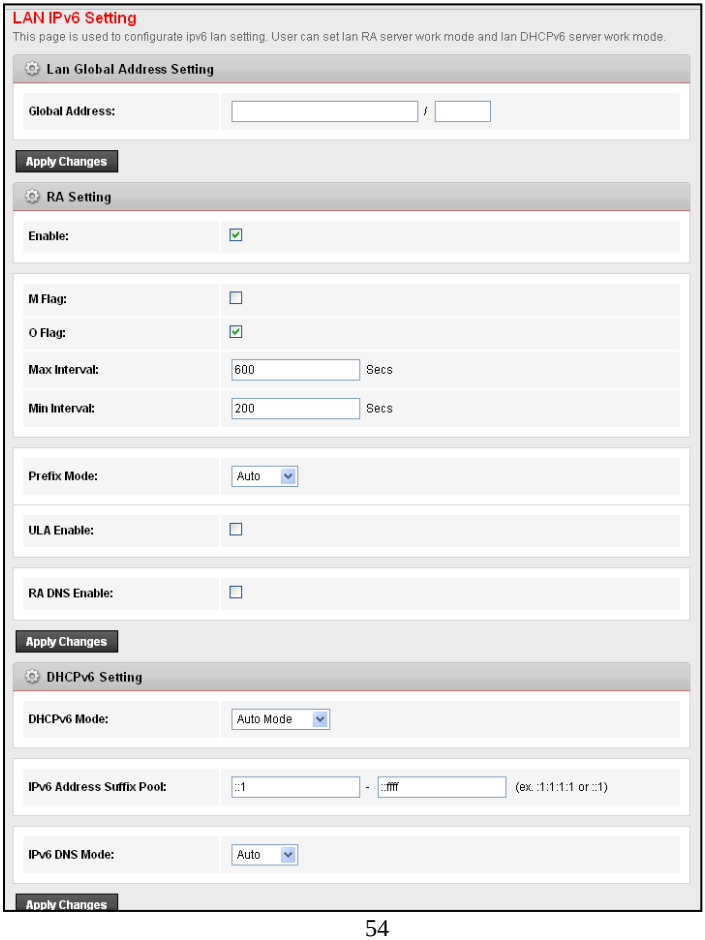


The following table describes the parameters and buttons of this page:

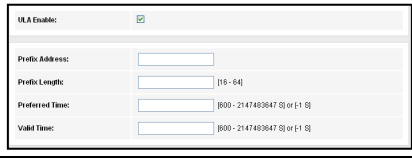
Field	Description
IP Address	Enter the specified IP address in the IP pool range, which is assigned to the host.
MAC Address	Enter the MAC address of a host on the LAN.
Add	After entering the IP address and MAC address, click it. A row will be added in the DHCP Static IP Table.
Delete Selected	Select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

4.4.1.9 LAN IPv6

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



The following table describes the RA parameters of this page.

Field	Description
Global Address	Specify the LAN global ipv6 address, which may be assigned by ISP.
RA Setting	
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.
Max interval	The maximum time allowed between sending unsolicited multicast Router Advertisements from the interface, in seconds. Note: The Max Interval must not be less than 4 seconds and not greater than 1800 seconds.
Min Interval	The minimum time allowed between sending unsolicited multicast Router Advertisements from the interface, in seconds. **Note: The Min Interval must not be less than 3 seconds and not greater than 0.75 * Max Interval.**
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.
ULA Enable	When enabled the following parameters appear: 
RA DNS Enable	When enabled the following parameters appear: 
DHCPv6 Setting	
DHCPv6 Mode	Specify the dhcpv6 server mode.

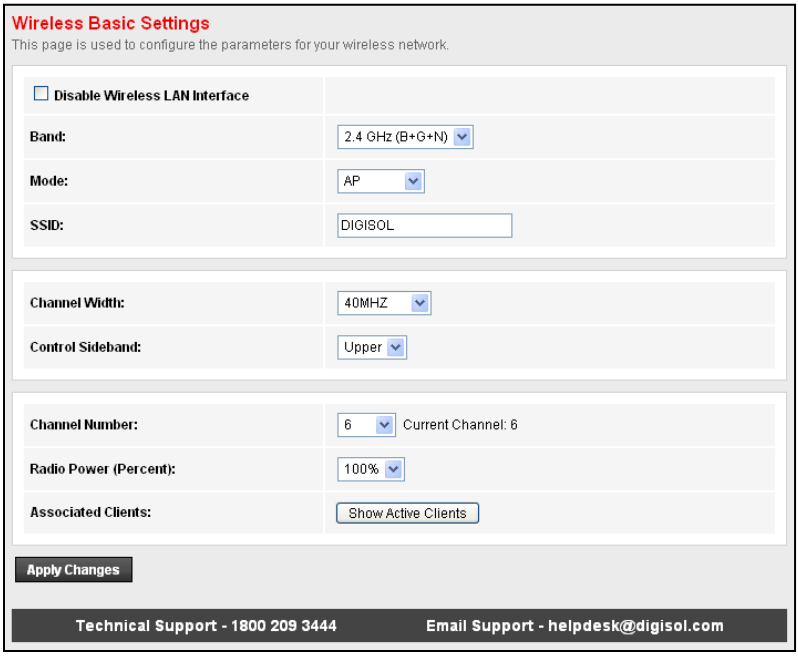
Field	Description
	"None": Close dhcpv6 server. "Manual": dhcpv6 server is opened and user specifies the dhcpv6 server address pool and other parameters. "Auto": dhcpv6 server is opened and it can use Wan dhcp-pd prefix to generate address pool.
IPv6 address suffix pool	Type the IPv6 address suffix range for the DHCPv6 LAN clients
IPv6 DNS Mode	Type the IPv6 DNS address

4.4.1.10 Wireless

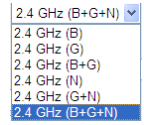
Choose **Setup > Wireless**. The WLAN page that is displayed contains Basic, Security, MBSSID, Access Control List, Advanced, WPS and WDS.

4.4.1.11 Basic

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



The following table describes the parameters of this page:

Field	Description
Band	Choose the working mode of the router. You can choose from drop-down list. 
Mode	Choose the network mode of the router, which varies according to the software. By default, the network model of the router is AP.
SSID	The service set identification (SSID) is a unique name to identify the router in the wireless LAN. Wireless stations associating to the router must have the same SSID. Enter a descriptive name that is used when the wireless client is connecting to the router.
Channel Width	Options available are 40 MHZ, 20 MHz and 40/20 MHz
Control Sideband	There are two sidebands upper and lower bands. The lower band comprises of channel numbers 1-7. The upper band comprises of channel numbers 5-11.
Channel Number	A channel is the radio frequency used by 802.11b/g/n wireless devices. There are 11 channels (from 1 to 11) available depending on the geographical area. When You may have a choice of channels (for your region) you should use a different channel from an adjacent AP to reduce the interference and degrading performance occurs when radio signal from different APs overlap. Choose a channel from the drop-down list box.
Radio Power (Percent)	You can choose the transmission power of the radio signal. The default one is 100%. It is recommended to choose the default value 100%.
Show Active Clients	Click it to view the information of the wireless clients that are connected to the router.
Apply Changes	Click it to apply the settings.

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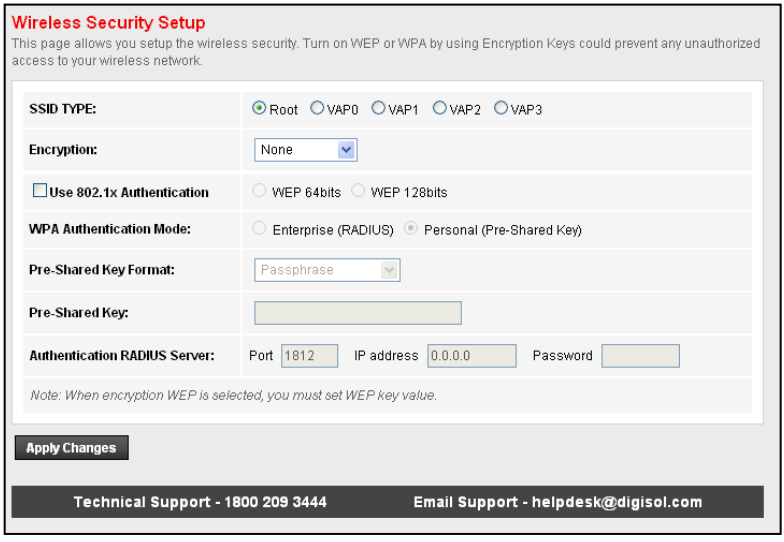
4.4.1.12 Security

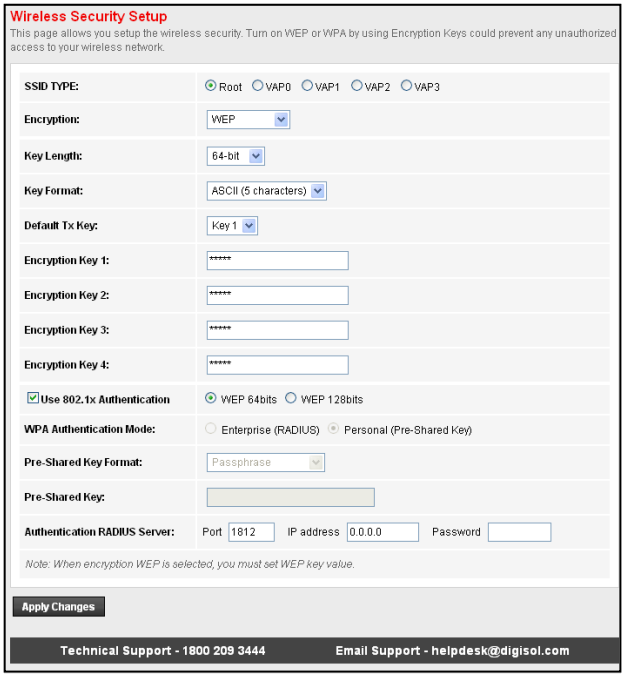
Choose **Wireless** > **Security** and the following page appears.



Field	Description
Encryption	Configure the wireless encryption mode. You can choose None, WEP, WPA (TKIP), WPA (AES), WPA2 (AES), WPA2 (TKIP) or WPA2 Mixed. ● 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 router through WPA or WPA2. Key differences between WPA and WEP are user authentication and

	improved data encryption.
WPA Authentication Mode	Select Personal (Pre-Shared Key), enter the pre-shared key in the Pre-Shared Key field. 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 to the router. If the encryption is set to WEP, the router uses 802.1x authentication, which is Radius authentication.

Select **WEP** encryption, as shown in the screen below and the following screen appears.



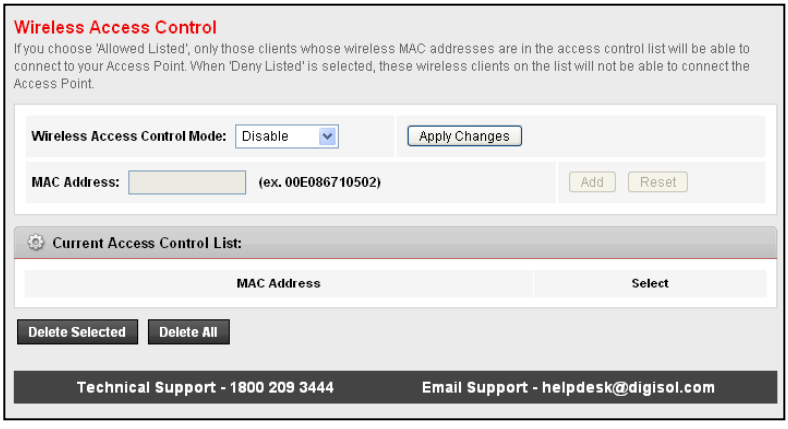
4.4.1.13 MBSSID

Choose **Wireless** > **MBSSID** and the following page appears. In this page, you can configure the multiple SSID on the access point.

It supports four virtual access points (VAPs). It is a unique name to identify the router in the wireless LAN. Wireless stations associating to the router must have the same name. Enter a descriptive name that is used when the wireless client connects to the router.

4.4.1.14 Access Control List

Choose **WLAN** > **Access Control List** and the following page appears. In this page, you can configure the access control of the wireless clients.



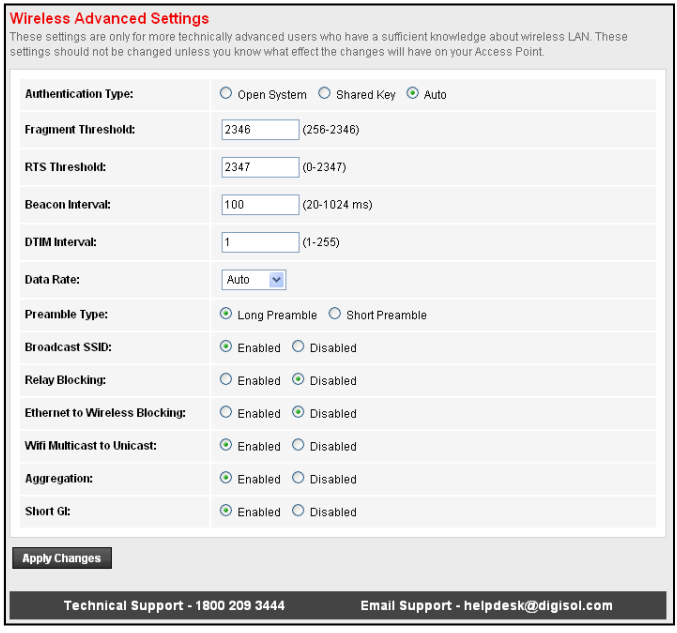
Choose **Allow Listed** as the access control mode to enable white list function. Only the devices whose MAC addresses are listed in the Current Access Control List can access the router.

Choose **Deny Listed** as the access control mode to enable black list function. The devices whose MAC addresses are listed in the Current Access Control List are denied to access the router.

4.4.1.15 Advanced

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

Note: The parameters in the Advanced link are modified by the professional personnel, it is recommended to keep the default values.



The following table describes the parameters of this page:

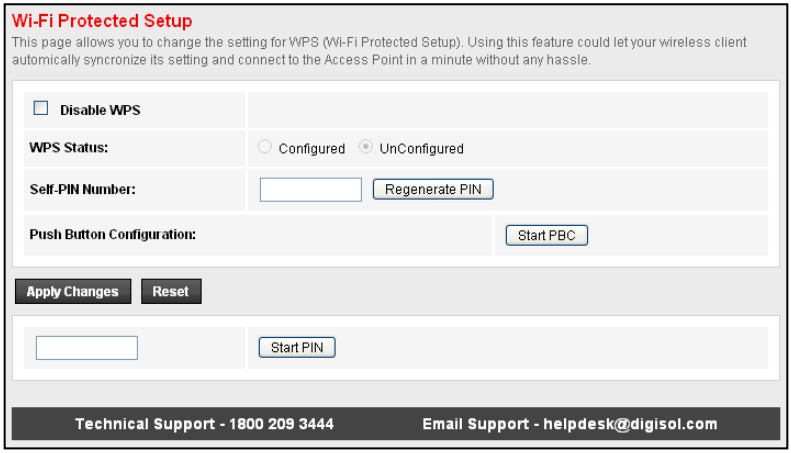
Field	Description
Authentication type	Select the router operating in the open system or encryption authentication. You can choose Open System, Shared Key, or Auto. ● In the open system, the wireless client can directly connect to the device.

	• In Shared key, the wireless client connects to the router using the shared key. • The default is set to Auto, which allows either Open System or Shared Key authentication to be used.
Fragment treshold	This value should remain at its default setting of 2346. It specifies the maximum size for a packet before data is fragmented into multiple packets. If you experience a high packet error rate, you may slightly increase the "Fragment Threshold" value within the value range of 256 to 2346. Setting this value too low may result in poor network performance. Only minor modifications of this value are recommended.
RTS Treshold	This value should remain at its default setting of 2347. If you encounter inconsistent data flow, only minor modifications are recommended. If a network packet is smaller than the preset "RTS threshold" size, the RTS/CTS mechanism will not be enabled.
Beacon Interval	The Beacon Interval value indicates the frequency interval of the beacon. Enter a value between 20 and 1024.
DTIM Interval	Data beacon proportion (transmission quantity indication). Its value range is 1-255 and the default value is 100.
Data Rate	Choose the transmission rate of the wireless data. You can choose Auto, 1 M, 2 M, 5.5 M, 11 M, 6 M, 9 M, 12 M, 18 M, 24 M, 36 M, 48 M, 54M, MSC0 ~ MSC15.
Preamble Type	• Long Preamble: It means this card always uses long preamble. • Short Preamble: It means this card can support short preamble capability.
Broadcast SSID	Select whether the router broadcasts SSID or not. You can select Enable or Disable. • Select Enable, the wireless client searches the router through broadcasting SSID. • Select Disable to hide SSID, the wireless clients cannot find the SSID.
Relay Blocking	Wireless isolation. Once this field is Enabled, the wireless clients that are connected to the router cannot intercommunicate.
Ethernet to Wireless Blocking	Whether the wireless network can communicate with the Ethernet network or not.

Wifi Multicast to Unicast	Enable it to use unicast to transmit multicast packets.
Aggregation	It is applied when the destination end of all MPDU are for one STA.
Short GI	It is not recommended to enable GI in obvious environment of Multi-path effect.
Apply Changes	Click on this button to apply the settings.

4.4.1.16 WPS

Choose **WLAN > WPS** and the following page appears.



There are two ways for the wireless client to establish connection with the router through WPS. Click Regenerate PIN to generate a new PIN. In the wireless client tool, enter the PIN which is generated by the router, start connection. The client will automatically establish the connection with the router through the encryption mode, and you need not enter the key. The other way is the wireless client generates PIN. In the above figure, enter PIN of the wireless client in the Client PIN Number field, then click Start PIN to establish the connection.

Note: The wireless client establishes the connection with the router through WPS negotiation. The wireless client must support WPS.

4.4.1.17 WDS

Choose **WLAN > WDS**, and the following page appears. In this page you can enable wireless distribution system (WDS) so that the router can communicate with another AP.

The following table describes the parameters of this page:

Field	Description
Enable WDS	Check this box to enable WDS.
MAC Address	Wireless MAC address of the AP to be connected.
Comment	Add comment for the WDS AP.
Current WDS AP List	All the MAC addresses of the AP to be connected will be listed here.

4.5 Advanced

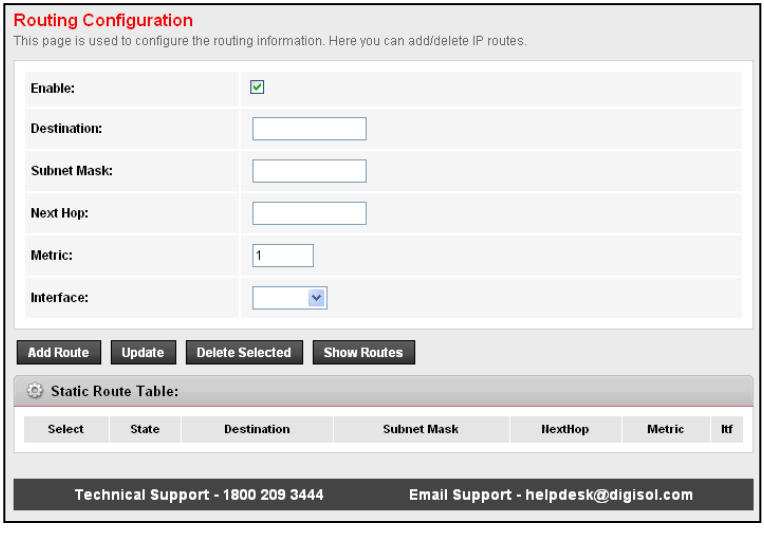
In the navigation bar, click Advanced. In the Advanced page that is displayed contains Routing, NAT, QoS, CWMP, Port Mapping and Others.

Routing

Choose **Advance > Routing**, and the page shown in the following figure appears. The page that is displayed contains Static Route, IPv6 Static Route and RIP.

4.5.1.1 Static Route

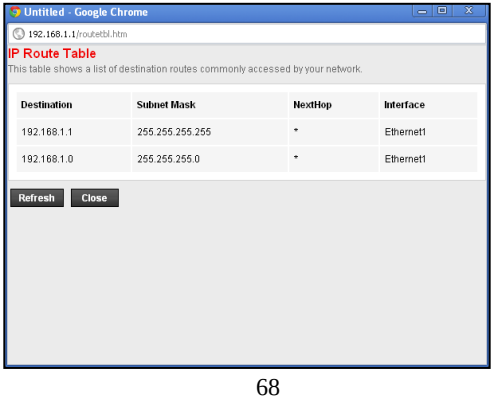
Click **Static Route** in the left pane, and the page shown in the following figure appears. This page is used to configure the routing information. You can add or delete IP routes.



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.



4.5.1.2 IPv6 Static Route

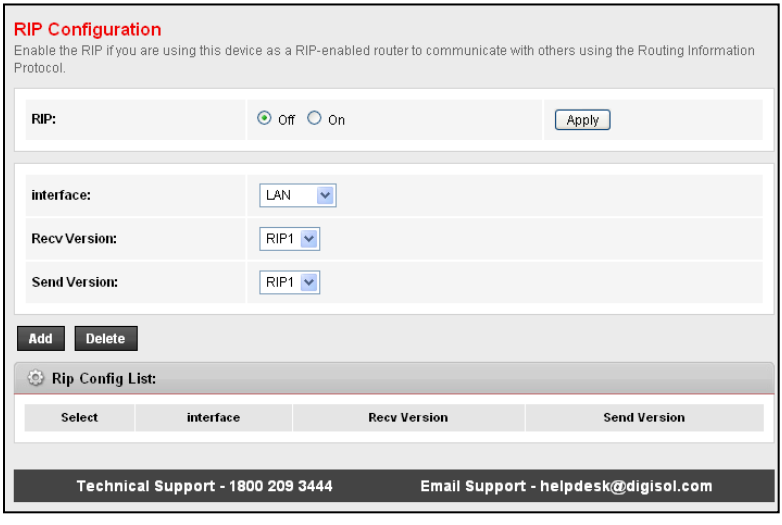
Click **IPv6 Static Route** in the left pane, and the page shown in the following figure appears. This page is used to configure the routing information. You can add or delete IP routes.

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

Field	Description
Destination	Enter the IPv6 address of the destination device.
Prefix Length	Enter the prefix length of the IPv6 address.
Next Hop	Enter the IP address of the next hop in the IPv6 route to the destination address.
Interface	The interface for the specified route.
Add Route	Click it to add the new static route to the IPv6 Static Route Table.
Delete Selected	Select a row in the IPv6 Static Route Table and click it to delete the row.

4.5.1.3 RIP

Click RIP in the left pane, 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.



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

Field	Description
RIP	Select Enable, the router communicates with other RIP-enabled devices.
Apply	Click it to save the settings of this page.
Interface	Choose the router interface that uses RIP.
Receive Version	Choose the interface version that receives RIP messages. You can

	choose RIP1, RIP2 or Both. 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	The working mode for sending RIP messages. You can choose RIP1 or RIP2. 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.

NAT

Choose **Advanced > NAT**, and the page shown in the following figure appears. The page that is displayed contains DMZ, Virtual Server, ALG, NAT Exclude IP, Port Trigger, FTP ALG Port and NAT IP Mapping.

4.5.1.4 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, FTP servers, SMTP (e-mail) servers and DNS servers.

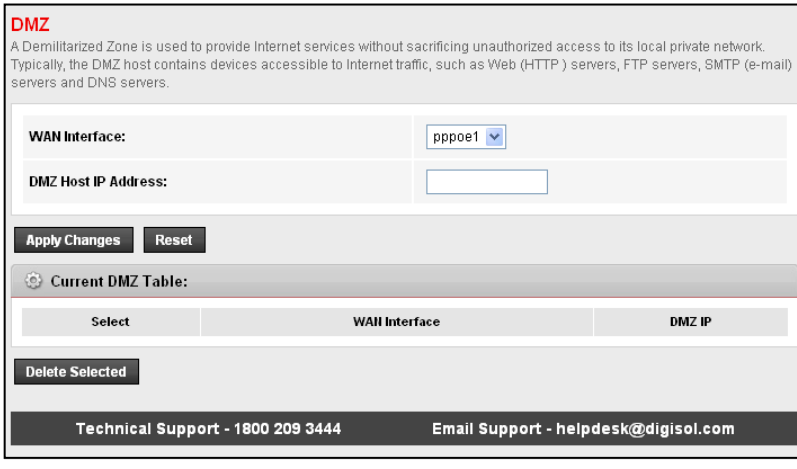
Click **DMZ** in the left pane, the page shown in the following figure appears.

The following steps describe how to configure manual DMZ.

Step 1 Select Enable DMZ to enable this function.

Step 2 Enter an IP address of the DMZ host.

Step 3 Click Apply Changes to save the settings.

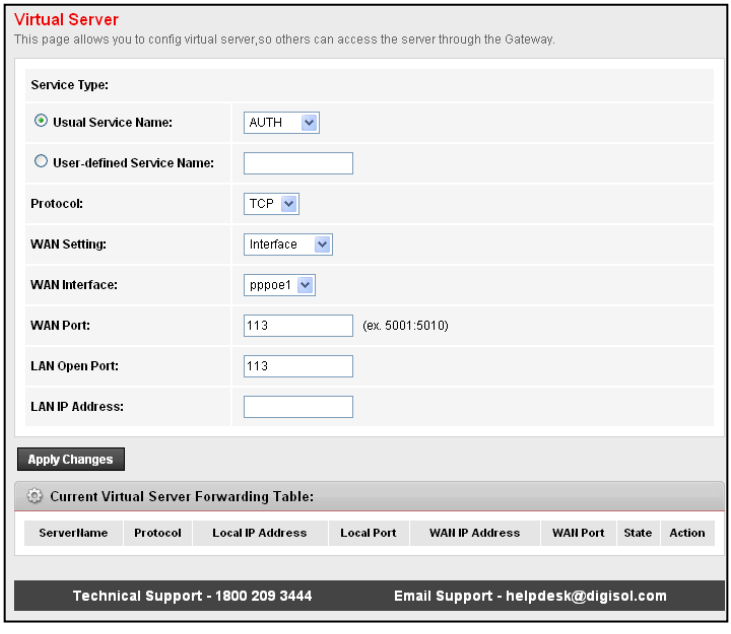


Note: DMZ when enabled, the remote access service of the Router web page will be disabled.

As an alternative, you can use the port forwarding for that IP address/Port. Please contact technical support for any technical help.

4.5.1.5 Virtual Server

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



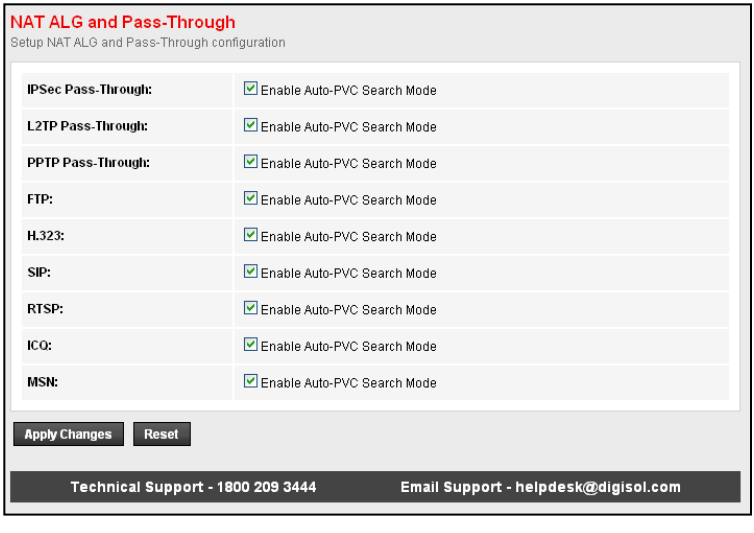
The following table describes the parameters of this page.

Field	Description
Service Type	You can select the common service type, for example, AUTH, DNS or FTP. You can also define a service name. 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 Open 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.

4.5.1.6 ALG

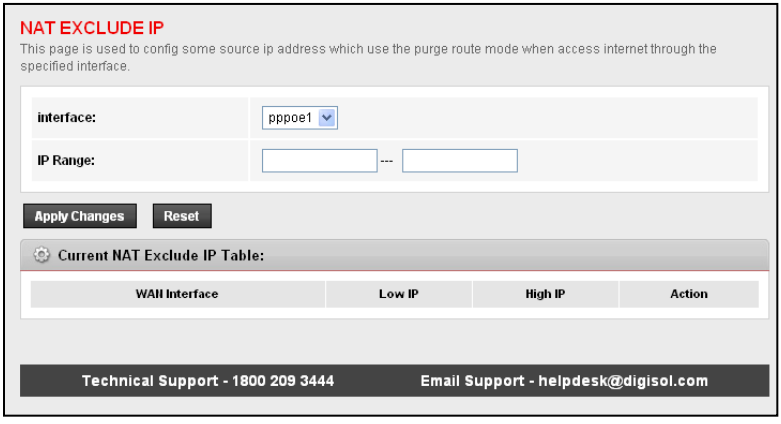
Click **ALG** in the left pane, and the page shown in the following figure appears. Choose the NAT ALG and Pass-Through options, and then click Apply Changes.



4.5.1.7 NAT Exclude IP

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

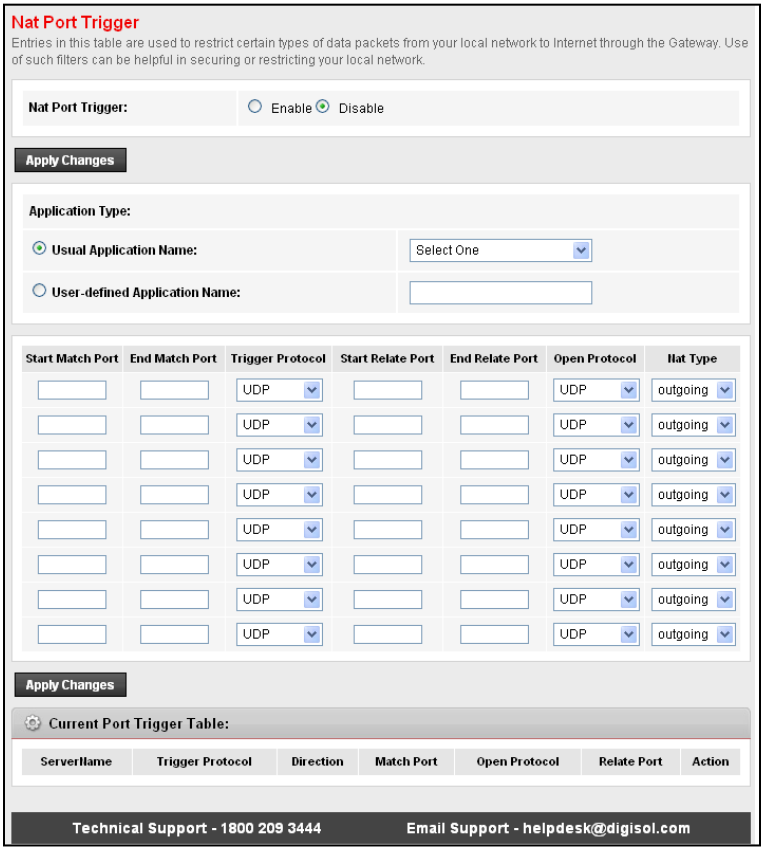
In the page, you can configure some source IP addresses which use the purge route mode when accessing internet through the specified interface.



Field	Description
IP range	Enter the IP address range, which do not require NAT translation entries to be permitted by the router.

4.5.1.8 Port Trigger

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



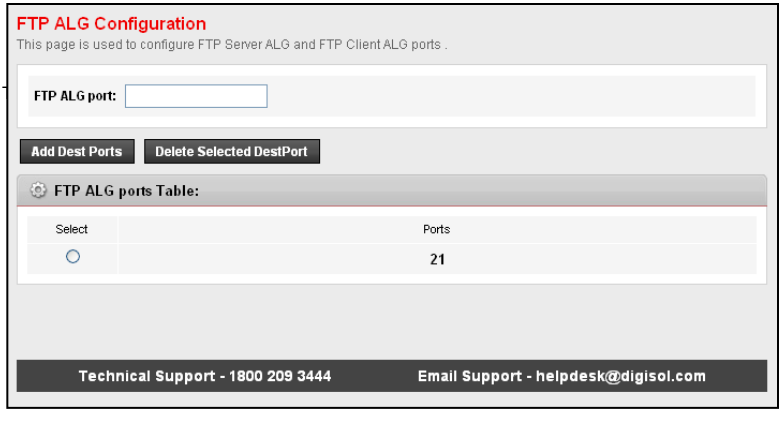
Click the Usual Application Name drop-down menu to choose the application you want to setup for port triggering. When you have chosen an application the default Trigger settings will populate the table below.

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.

4.5.1.9 FTP ALG Port

Click **FTP ALG Port** in the left pane, 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 port 21, the FTP ALG module will be informed to monitor other TCP ports to ensure NAT pass-through of FTP.



4.5.1.10 NAT IP Mapping

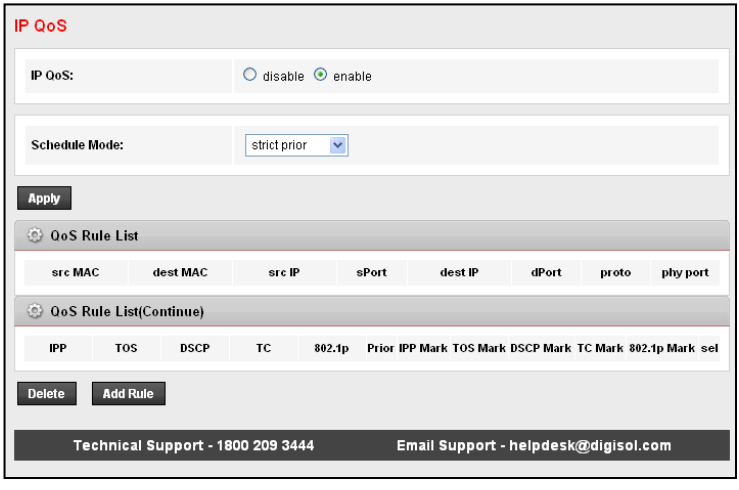
NAT is short for Network Address Translation. The Network Address Translation Settings window allows you to share one WAN IP address for multiple computers on your LAN.

Click **NAT IP Mapping** in the left pane, the page shown in the following figure appears.

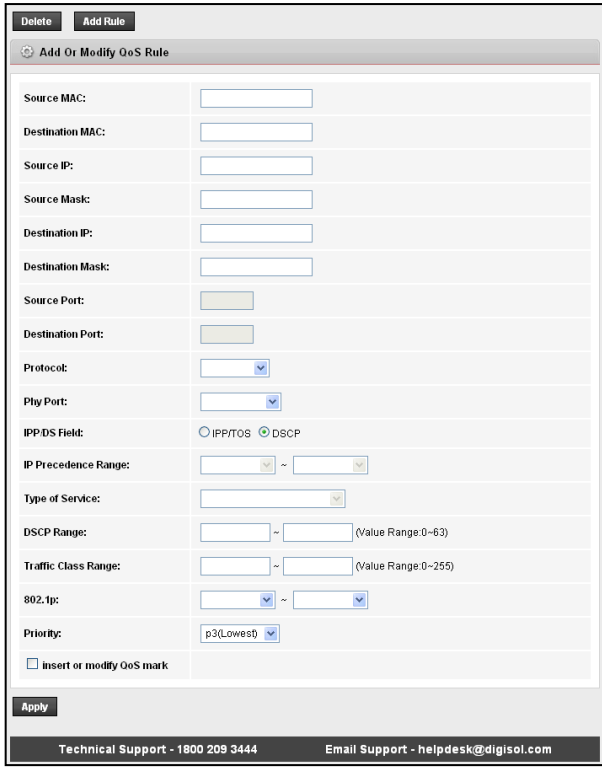
Entries in this table allow you to configure one IP pool for specified source IP address from LAN, so one packet whose source IP is in range of the specified address will select one IP address from the pool for NAT.

QoS

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

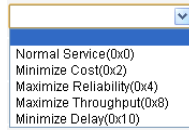


- Enable IP QoS and click Apply to enable IP QoS function.
- Click add rule to add a new IP QoS rule. The screen shown below will appear.



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

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

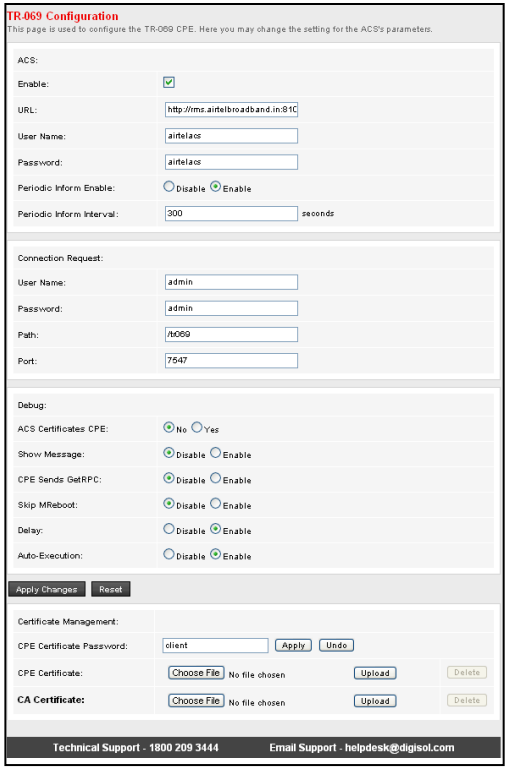
Destination Port	The port of the destination data packet.
Protocol	The protocol responds to the IP QoS rules. You can choose TCP, UDP, or ICMP.
Phy Port	The LAN interface responds to the IP QoS rules.
IPP/DS Field	Select the IP packet header field type, Select IPP/TOS (IP Precedence/Type of Service) for defining the IPP Range or Select DSCP (Differentiated Services Code Point) for defining the DSCP Range.
IP Precedence Range	Select the IP Precedence range values for IPP/TOS.
Type of service	Select the type of service. 
DSCP Range	Type the DSCP Value Range from 0~63.
Traffic Class Range	Type the Traffic Class range from 0~255.
802.1p	You can choose from 0 to 7.
Priority	The priority of the IP QoS rules. P0 is the highest priority and P3 is the lowest.

☎ 1800-209-3444 (Toll Free)
helpdesk@digisol.com sales@digisol.com www.digisol.com

CWMP

TR-069 is a protocol for communication between a CPE and Auto-Configuration Server (ACS).

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

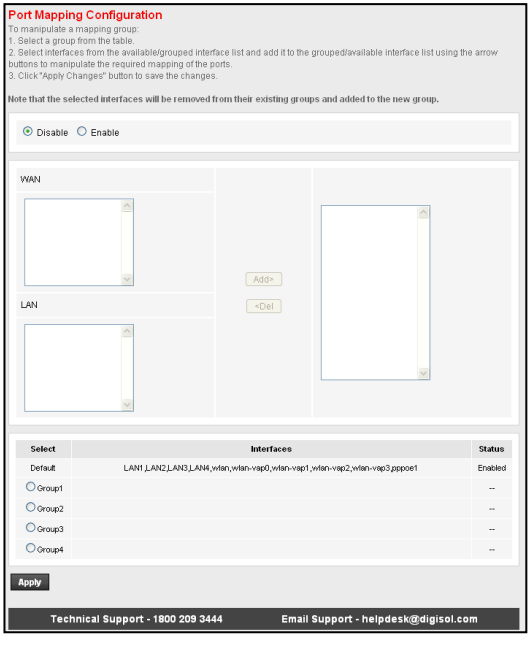


The following table describes the parameters of this page:

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.
Path	Identifies the PATH that the service should use.
Port	Identifies the port number that the service should use.
Debug	
ACS Certificates CPE	As vital data (like user names and passwords) may be transmitted to CPE via TR-069 protocol it is essential to provide secure transport channel and always authenticate the CPE against the ACS. Secure transport and authentication of the ACS identity can easily be provided by usage of HTTPS and verification of ACS certificate.
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.

Port mapping

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



The procedure for manipulating a mapping group is as follows:

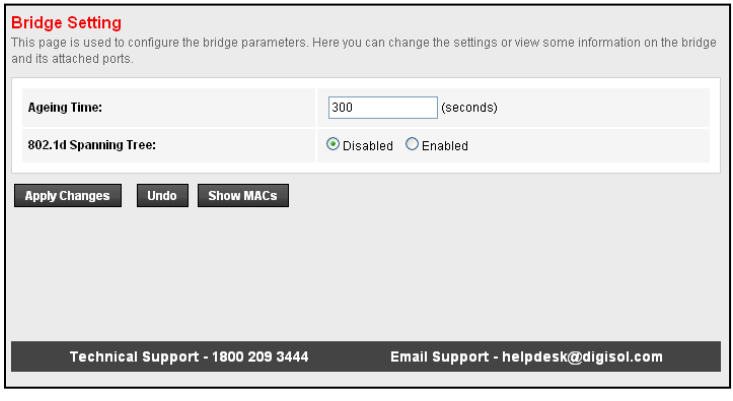
- Select Enable to enable this function.
- Select a group from the table.
- Select interfaces from the WAN and LAN interface list and add them to the grouped interface list using the arrow buttons to manipulate the required mapping of the ports.

Click **Apply Changes** to save the changes.

Others

Bridge Setting

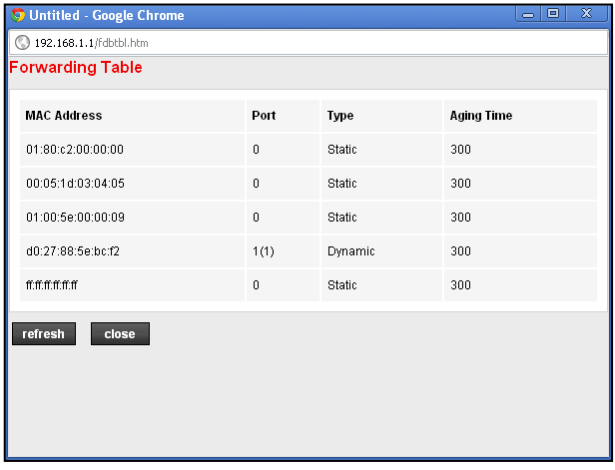
Choose **Advanced > Others>Bridge Setting**, and the page shown in the following figure appears. This page is used to configure the bridge parameters. You can change the settings or view some information on the bridge and its attached ports.



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

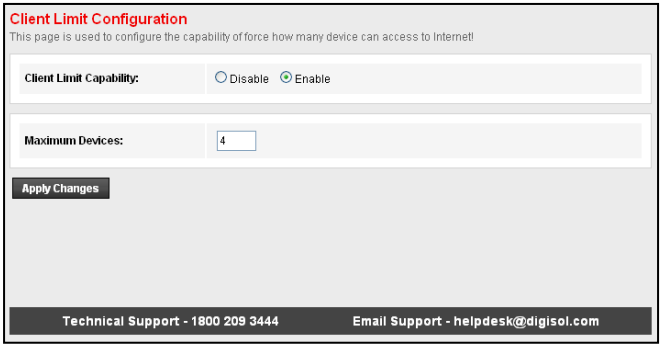
Field	Description
Ageing Time	If the host is idle for 300 seconds (default value), its entry is deleted from the bridge table.
802.1d Spanning Tree	You can select Disable or Enable. Select Enable to provide path redundancy while preventing undesirable loops in your network.
Show MACs	Click it to show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

Click **Show MACs**, and the page shown in the following figure appears. This table shows a list of learned MAC addresses for this bridge.



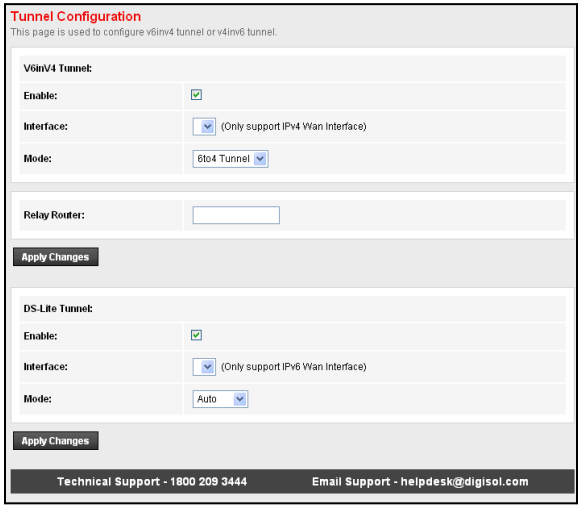
Client Limit

Choose **Client Limit** in the left pane, and the page shown in the following figure appears. This page is used to configure the capability of forcing how many devices can access to the Internet.



Tunnel

Choose **Tunnel** in the left pane, and the page shown in the following figure appears. You may configure tunnels to connect to ipv4 and ipv6 networks.

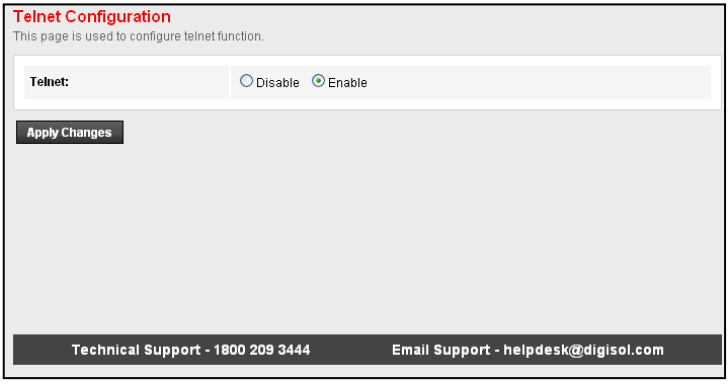


The following table describes the parameters and button of this page.

Field	Description
v6inv4 Tunnel	
Interface	Select the tunnel interface name; user can set 2 v6inv4 tunnel.
Mode: 6to4 Tunnel	Enable or disable special tunnel.
DS-Lite Tunnel	
Enable	Enable or disable the DS-Lite tunnel.
Interface	Select current wan interface used as tunnel interface.
Mode: Auto/Manual	Select Auto or Manual.

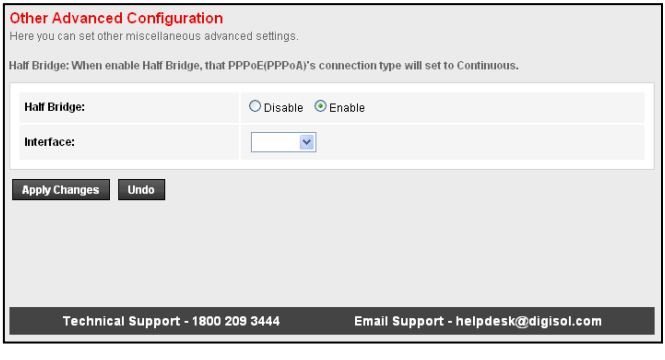
Telnet

This page is used to configure telnet function.



Others

Choose **Others** in the left pane, and the page shown in the following figure appears. You can enable half bridge so that the PPPoE or PPPoA connection will be set to Continuous.



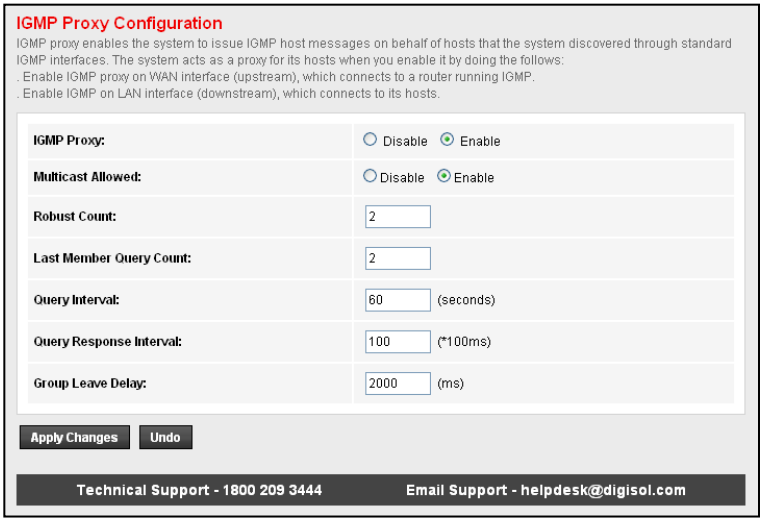
4.6 Service

In the navigation bar, click Service. The Service page that is displayed contains IGMP, UPNP, SNMP, DNS, DDNS, FTP server and USB storage.

IGMP

IGMP Proxy

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

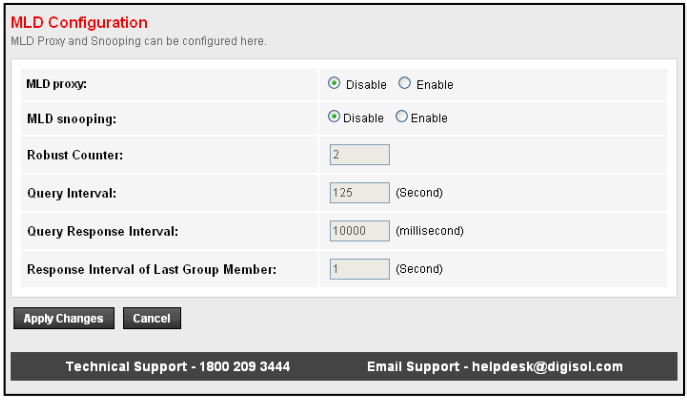


Field	Description
Robust Count	The Robust Count allows tuning for expected packet loss on a network. By default, the value is set to 2.

Last member query count	This parameter indicates last member query interval. It is the maximum response time in seconds for an IGMP host in reply to group-specific queries. By default, the value is set to 2
Query Interval	This parameter indicates the query interval. It is the interval in seconds (s) between general queries sent by the querier. Default is 60 secs.
Query response Interval	This parameter indicates the query response interval. It is the maximum response time in seconds for an IGMP host in reply to general queries. By default, the value is set to 100.
Group Leave delay	The message is sent when a host leaves a group. Default value is 2000.

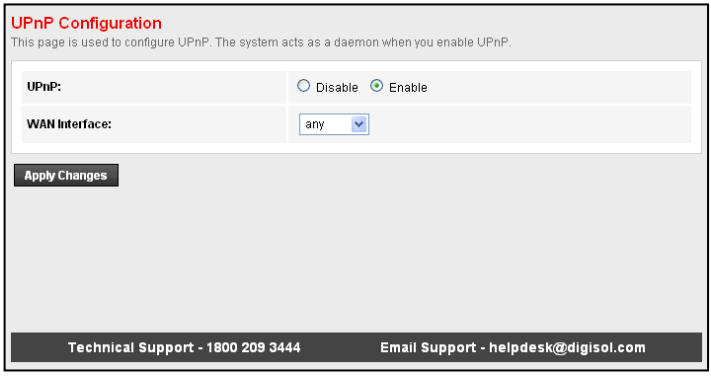
MLD

MLD Proxy and snooping can be configured here.



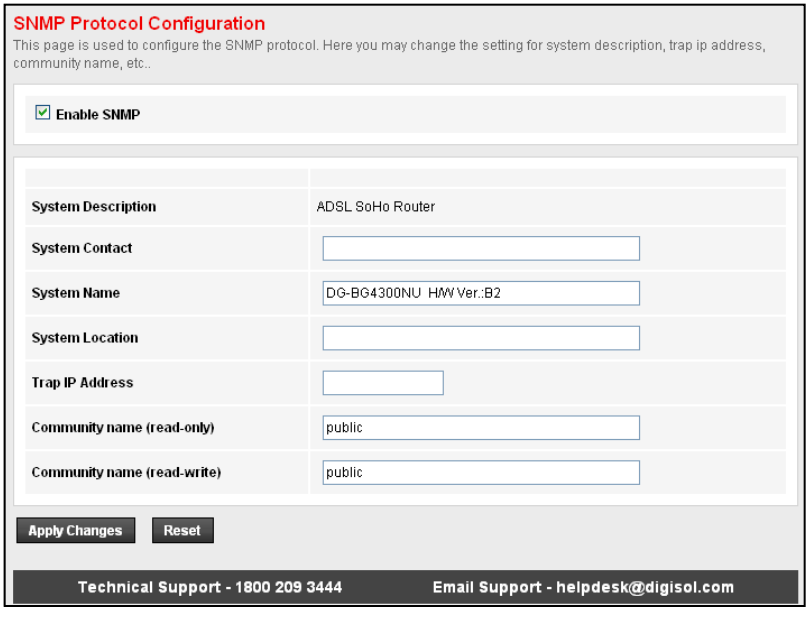
UPnP

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



SNMP

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



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

Field	Description
Enable SNMP	Select it to enable SNMP function. You need to enable SNMP and then you can configure the parameters of this page.
System Description	System description of the DSL device.
System Contact	Contact person and/or contact information for the DSL device.
System Name	An administratively assigned name for the DSL device.
System Location	The physical location of the DSL device.

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.

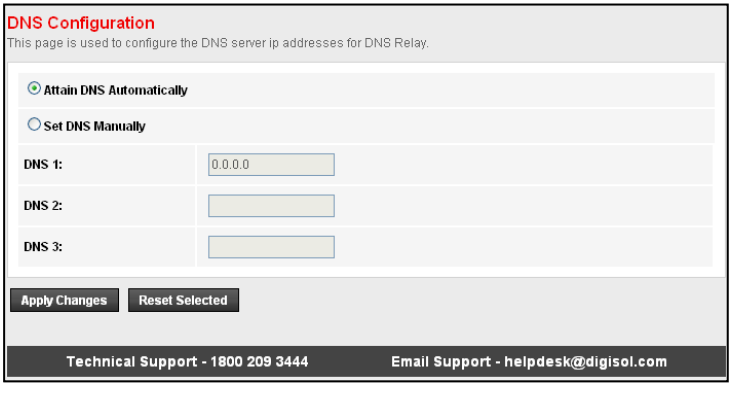
DNS

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

Choose **Service > DNS**. The DNS page that is displayed contains DNS, IPv6 DNS and DDNS.

DNS

Click **DNS** in the left pane, and the page shown in the following figure appears.

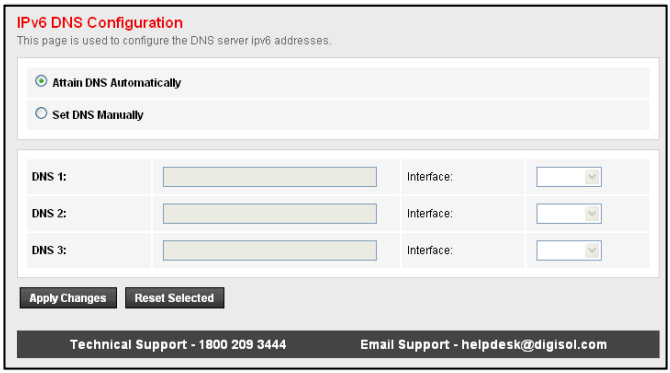


The following table describes the parameters and buttons of this page:

Field	Description
Attain DNS Automatically	Select it, the router accepts the first received DNS assignment from one of the PPPoA, PPPoE or 1483 Routed 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 on reset selected to reset the values back to default.

IPv6 DNS

Click **DNS** in the left pane, and the page shown in the following figure appears. This page is used to configure the DNS server IPv6 addresses.



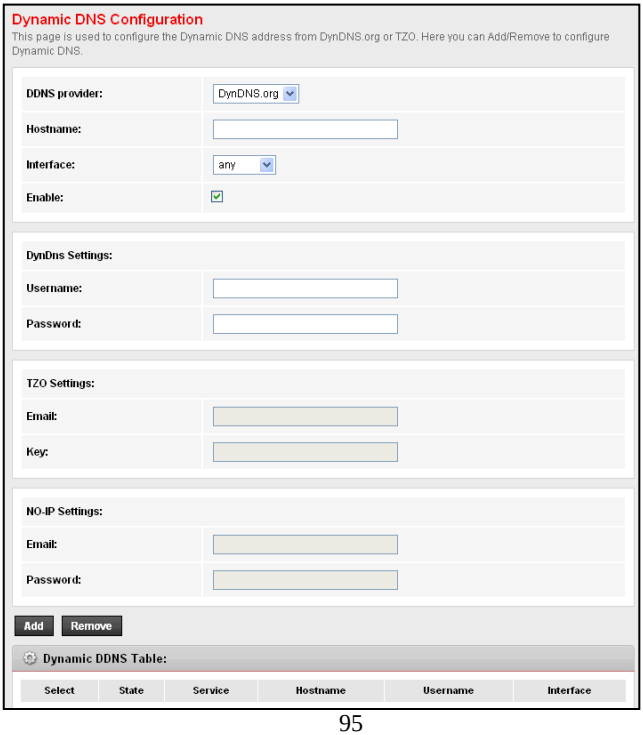
The following table describes the parameters and buttons of this page.

Field	Description
Attain DNS	Select it, the router accepts the first received DNS assignment from one of the

Automatically	PPPoA, PPPoE or 1483 Routed enabled PVC(s) during the connection establishment.
Set DNS Manually	Select it, enter the IP addresses and choose the WAN interface of the primary, the secondary and the tertiary 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.

DDNS

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



The following table describes the parameters of this page:

Field	Description
DDNS provider	Choose the DDNS provider name. You can choose DynDNS.org, TZO or NO-IP.
Host Name	The DDNS identifier.
Interface	Select the interface form the list.
Enable	Enable or disable DDNS function.
Username	The name provided by DDNS provider.
Password	The password provided by DDNS provider.

FTP Server

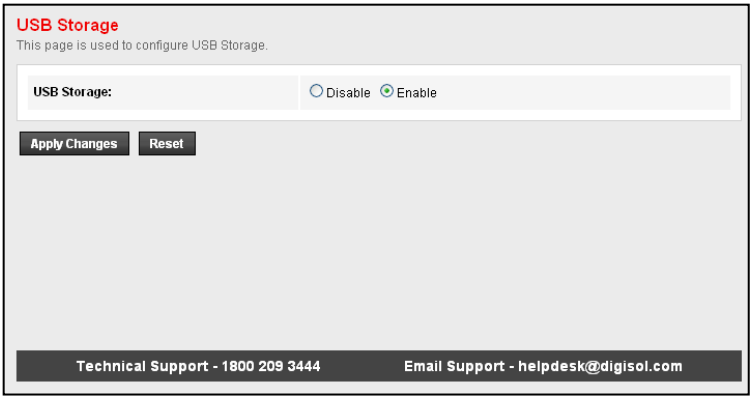
Enable start, to run the FTP server.

USB Storage

This page allows you to enable the USB Mass Storage Service.

User can plug the USB Pendrive / Portable drive to upload and download the data.

This Storage can also be accessed remotely using the FTP port.

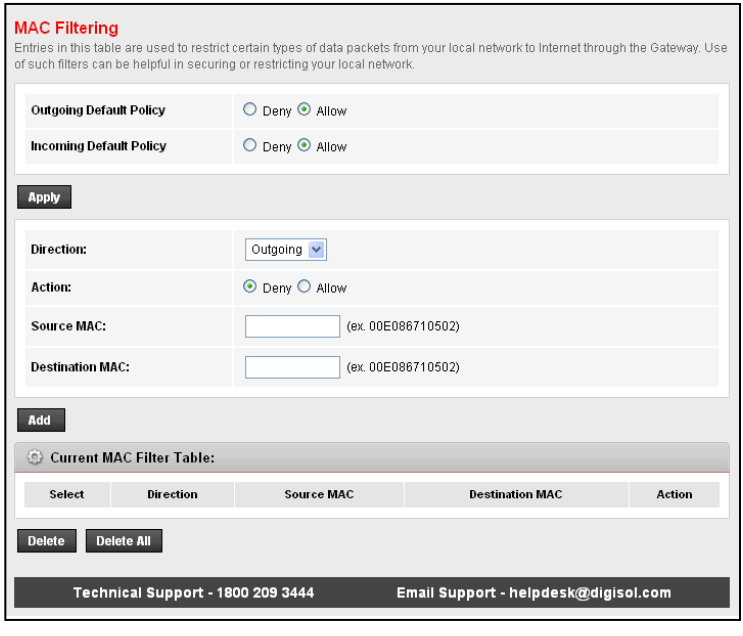


4.7 Firewall

Choose **Firewall**. The Firewall page that is displayed contains MAC Filter, IP/Port Filter, URL Filter, ACL, DoS and Parental Control.

MAC Filter

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



Field	Description
Outgoing Default Policy	Select default Allow OR Deny for Outgoing policy.
Incoming Default Policy	Select default Allow OR Deny for Incoming policy.
Direction	Select Incoming or Outgoing direction.
Action	Select Allow or Deny for MAC filter entry.
Source MAC	Type the MAC address of the source device or PC.
Destination MAC	Type the MAC address of the destination device or PC.

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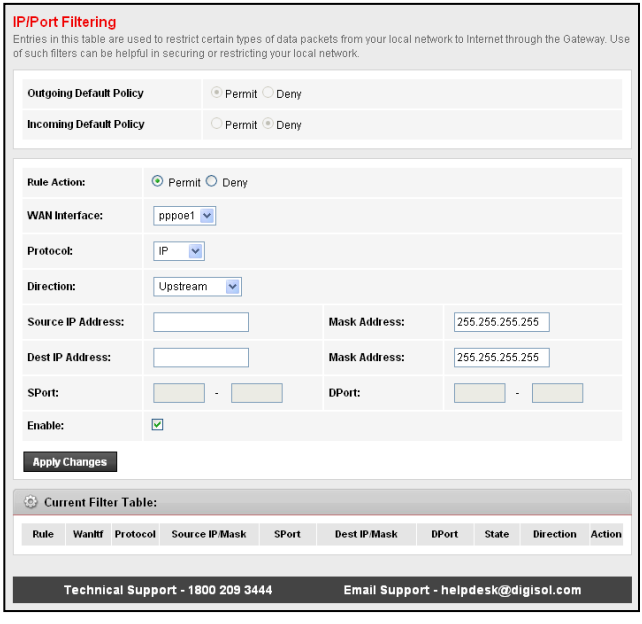
helpdesk@digisol.com sales@digisol.com www.digisol.com

IP/Port Filter

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

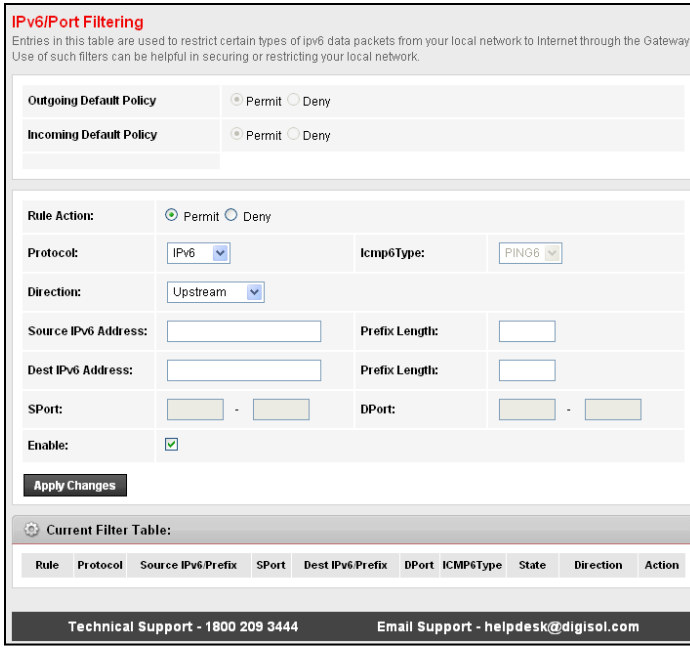


Field	Description
Rule Action	Select Permit to Allow packet route and select Deny to stop the packet.
Protocol	Select the Protocol type for a rule.
Direction	Select Upstream or Downstream direction.
Source IP Address	Type the IPv4 address of source device or host.

Destination IP Address	Type the IPv4 address of destination device or host.
Mask Address	Type the subnet mask address.
S-Port	Type the Source port range.
D-Port	Type the destination port range.
Enable	Select check box to enable the rule or uncheck to disable the rule.

IPv6/Port Filter

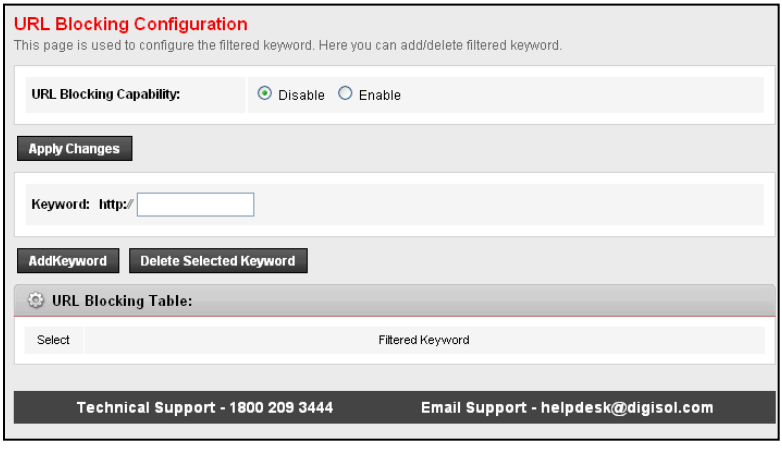
Click **IPv6/Port Filter** in the left pane, and the page shown in the following figure appears. Entries in this table are used to restrict certain types of ipv6 data packets from your local network to the Internet through the Gateway.



Field	Description
Rule Action	Select Permit to Allow packet route and select Deny to stop the packet.
Protocol	Select the Protocol type for a rule.
Direction	Select Upstream or Downstream direction.
Icmp6Type	Select the ICMP version.
Source IPv6 Address	Type the IPv6 address of source device or host.
Destination IPv6 Address	Type the IPv6 address of destination device or host.
Prefix Length	Type the Prefix length value of the IPv6 address.
S-Port	Type the Source port range.
D-Port	Type the destination port range.
Enable	Select check box to enable the rule or uncheck to disable the rule.

URL Filter

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



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

Field	Description
URL Blocking Capability	You can choose Disable or Enable. ● 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/KEYWORD Blocking Table.
Keyword	Enter the URL/keyword to block.
Addkeyword	Click it to add a URL/keyword to the URL/KEYWORD Blocking Table.
Delete Selected Keyword	Select a row in the URL/KEYWORD Blocking Table and click Delete to delete the row.
URL/KEYWORD	A list of URL (s) to which access is blocked will be displayed in this

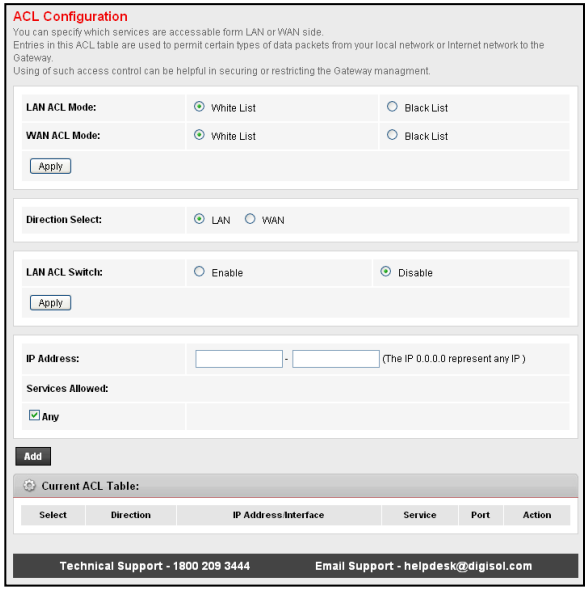
Field	Description
Blocking Table	table.

ACL

ACL

Choose **Firewall > 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.

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



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.
Reset	Click it to refresh this page.
Current ACL Table	Displays the services that are added and are active.

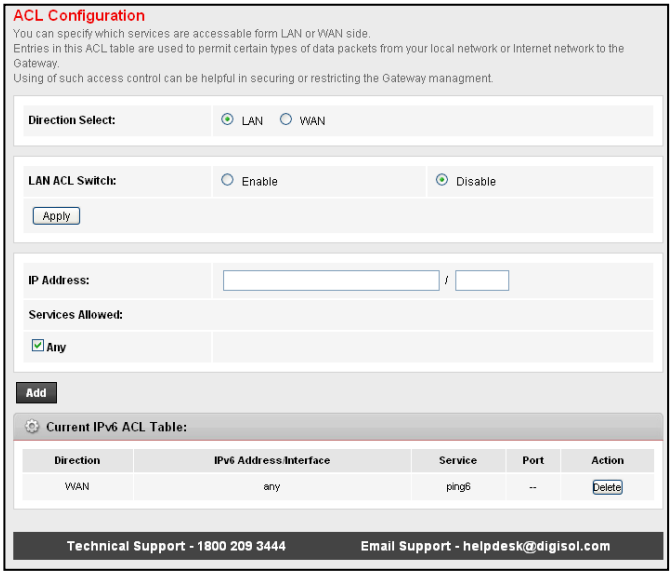
Note: DMZ when enabled, the remote access service of the Router web page will be disabled.

As an alternative, you can use the port forwarding for that IP address/Port. Please contact technical support for any technical help.

IPv6 ACL Configuration

You can select which services are accessible from LAN or WAN.

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.



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.

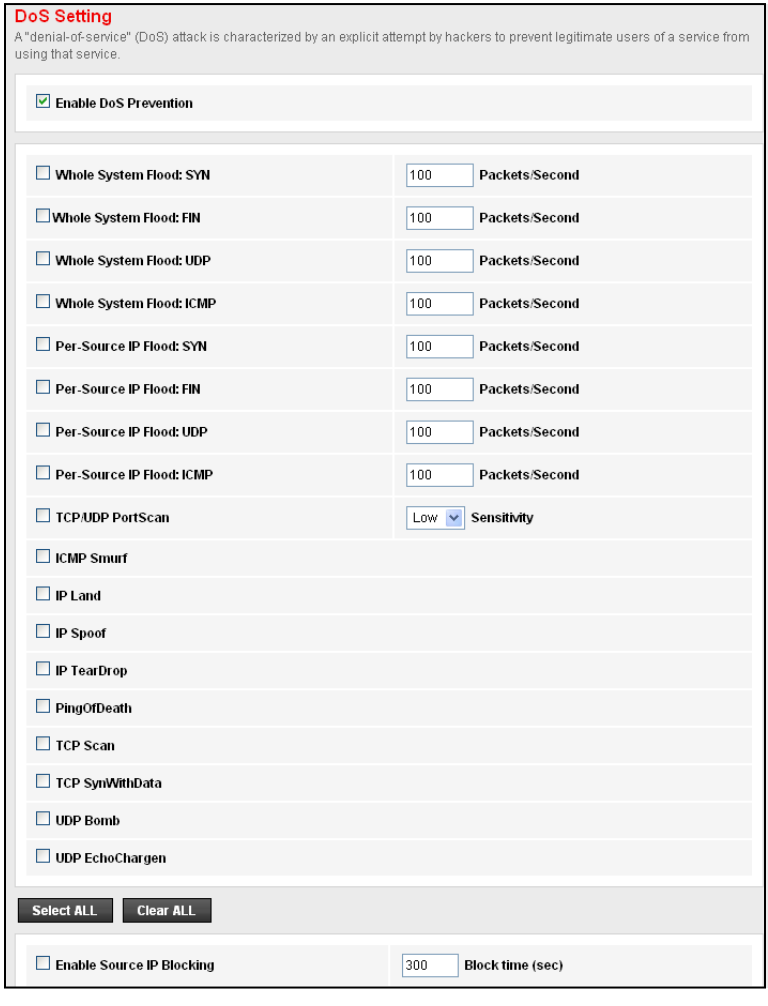
A denial-of-service attack (DoS attack) is an attempt to make a computer resource unavailable to its intended users. One common method of attack involves saturating the target machine with external communications requests, such that it cannot respond to legitimate traffic, or responds so slowly as to be rendered effectively unavailable. Such attacks usually lead to a server overload.

In general terms, DoS attacks are implemented by either forcing the targeted computer(s) to reset, or consuming its resources so that it can no longer provide its intended service or obstructing the communication media between the intended users and the victim so that they can no longer communicate adequately.

Enable DoS Prevention to detect and prevent denial of service attacks through automatic rate filtering or rules to protect legitimate users during the DoS attacks.

Click **DoS** in the left pane, and the page shown in the following figure appears. In this page, you can prevent DoS attacks.

☎ 1800-209-3444 (Toll Free)
helpdesk@digisol.com sales@digisol.com www.digisol.com

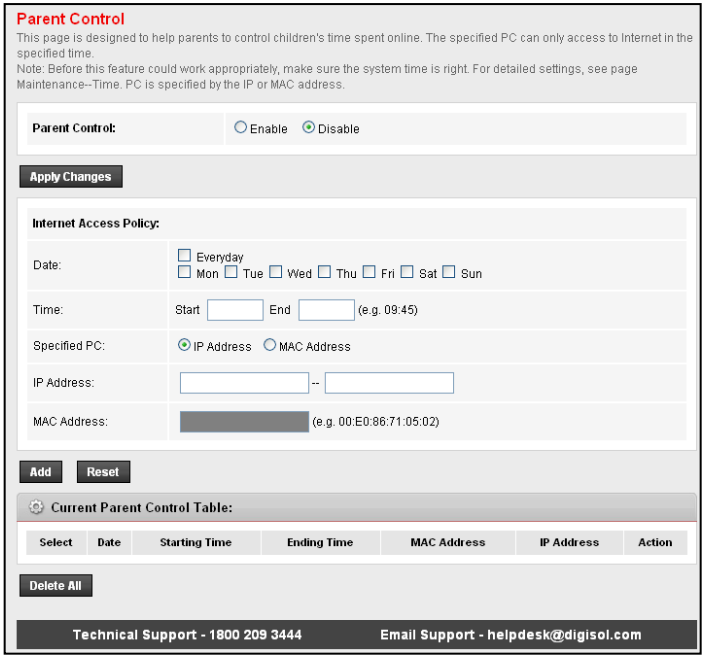


☎ 1800-209-3444 (Toll Free)
helpdesk@digisol.com sales@digisol.com www.digisol.com

Parental Control

This page is designed to help control children's time spent online. The specified PC can only access to internet in the specified time.

Note: Before this feature could work appropriately, make sure the system time is right. For detailed settings, see page Maintenance-Time. PC is specified by the IP or MAC address.



4.8 Maintenance

In the navigation bar, click Maintenance. The Maintenance page that is displayed contains Update, Password, Reboot, Time, Log and Diagnostics.

Update

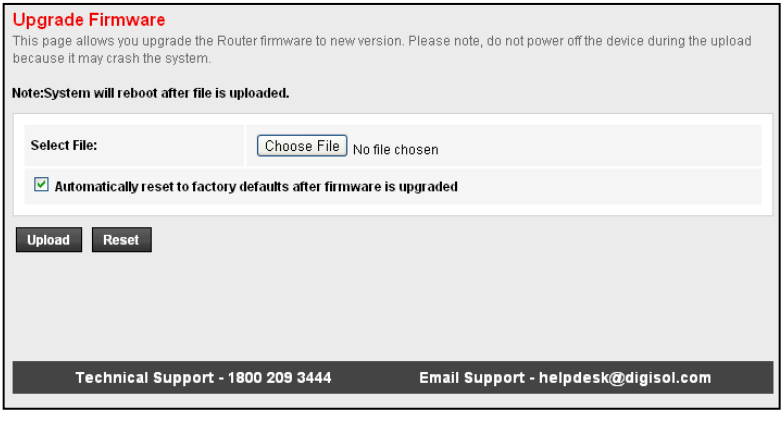
Choose **Admin** > **Update**. The Update page that is displayed contains Upgrade Firmware and Backup/Restore.

Caution:

Do not turn off the router or press the Reset button while the procedure is in progress.

Upgrade Firmware

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

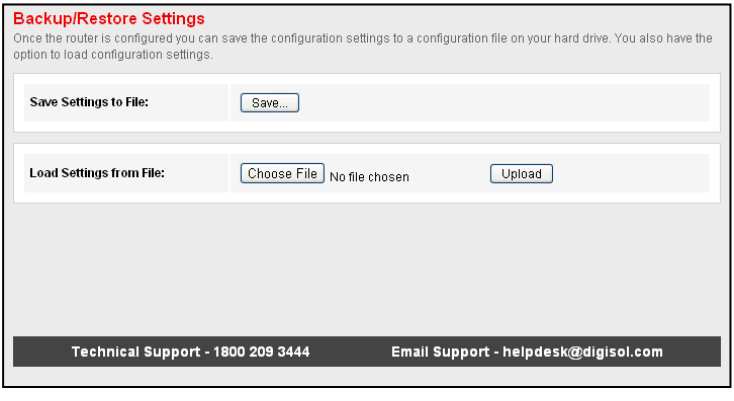


The following table describes the parameters and button of this page:

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

Backup/Restore

Click **Backup/Restore** in the left pane, and the page shown in the following figure appears. You can backup the current settings to a file and restore the settings from the file that was saved previously.

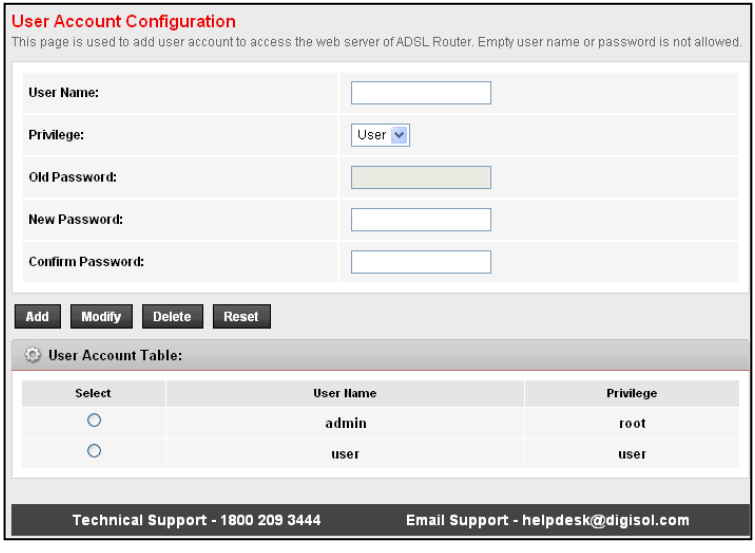


The following table describes the parameters and button of this page:

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.

Password

Choose **Maintenance > Password**, and 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.

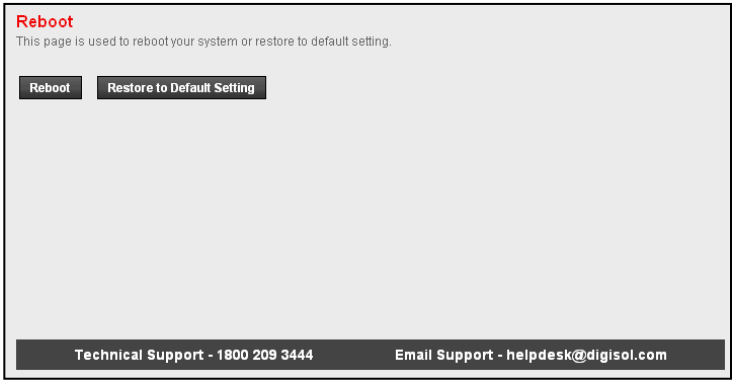


The following table describes the parameters of this page:

Field	Description
User Name	Choose the user name for accessing the router. You can choose admin or user.
Privilege	Choose the privilege for the account.
Old Password	Enter the old password.
New Password	Enter the new password.
Confirm Password	Enter the new password again.

Reboot

Choose **Maintenance >Reboot,** and the page shown in the following figure appears. You can set the router reset to the default settings.

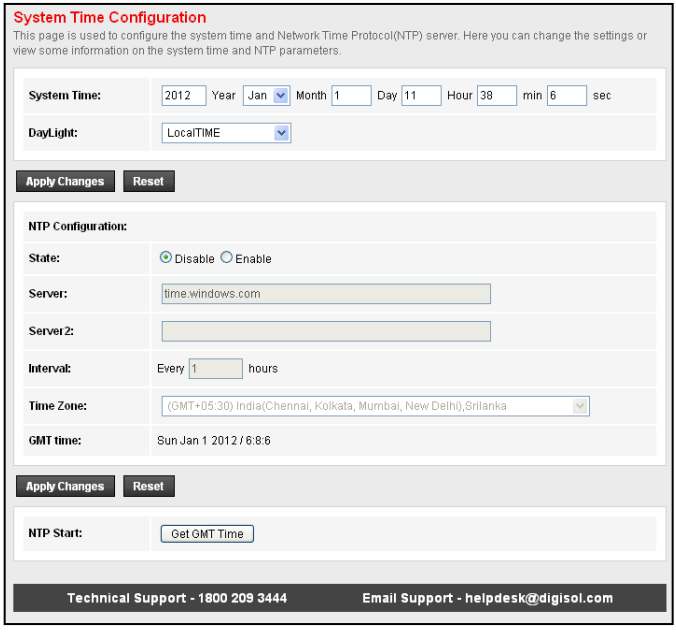


The following table describes the parameters and buttons on this page:

Field	Description
Reboot	Click it to reboot the router.
Restore to Default Setting	Reset to the factory default settings and reboot the router.

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.



The following table describes the parameters of this page:

Field	Description
System Time	Set the system time manually.
Day Light	Check this option if your location observes daylight saving time. Daylight saving time begins in the southern hemisphere between September – November and ends between March – April. Standard time begins in the southern hemisphere between March – April and ends between September – November. Many

	countries in the southern hemisphere may observe DST.
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.
Interval	Time when the NTP client will synchronise with NTP server.
Time Zone	Choose the time zone in which area you are from the drop down list.

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.

Field	Description
Error	Enabling this option will display the errors such as wrong configuration or password is wrong.
Notice	Enabling this will capture the events such as Web management login , Link is down etc.

Diagnostics

In the navigation bar, click Diagnostics. The Diagnostics page that is displayed contains Ping, Ping6, Traceroute, Traceroute6, OAM Loopback, ADSL Diagnostic and Diag-Test.

Ping

Choose **Diagnostics > Ping**. The Ping page that is displayed contains Ping and Ping6.

Ping

Click **Ping** in the left pane, and the page shown in the following figure appears.

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

Field	Description
Host	Enter the valid IP address or domain name.
Interface	Choose the interface through which the Ping6 diagnostic is performed.
Ping	Click it to start to Ping.

Ping6

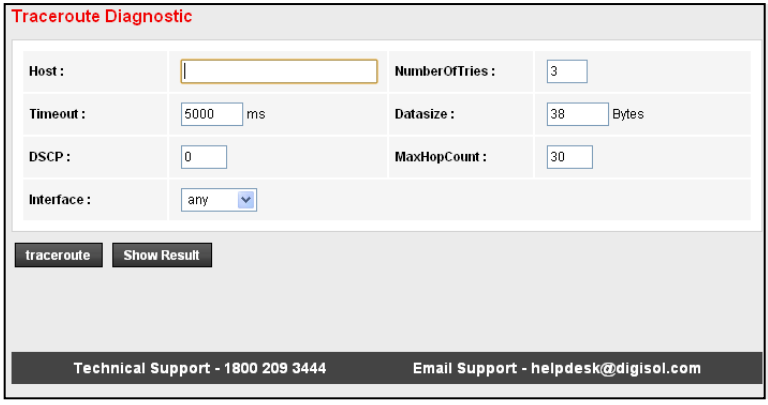
Click **Ping6** in the left pane, and the page shown in the following figure appears.

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

Field	Description
Host	Enter an IP address for Ping6 diagnostic.
Interface	Choose the interface through which the Ping6 diagnostic is performed.

Traceroute

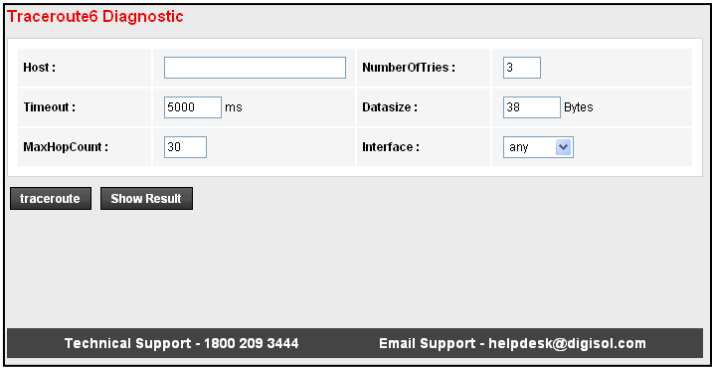
Click **Traceroute** in the left pane, and the following page appears. By Traceroute Diagnostic, you can track the route path of information flow from your computer to the other side host.



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

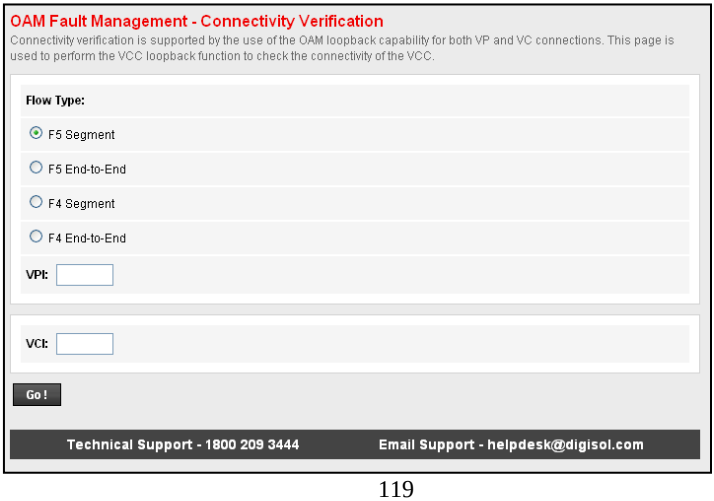
Field	Description
Host	Enter the destination host address for diagnosis.
NumberOfTries	Number of repetitions.
Timeout	Put in the timeout value.
Datasize	Packet size.
DSCP	Differentiated Services Code Point, you should set a value between 0-63.
MaxHopCount	Maximum number of routes.
Interface	Select the interface.
Traceroute	Click traceroute.

Traceroute 6



OAM Loopback

Choose **Diagnostics > 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.



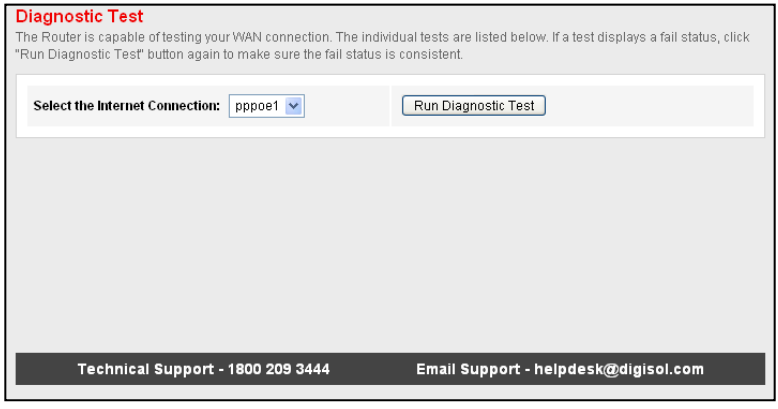
Click Go! to start testing.

ADSL Statistics

Choose **Diagnostics > ADSL Statistics**. The page shown in the following figure appears. It is used for ADSL tone diagnostics. Click **Start** to start ADSL tone diagnostics.

Diag-Test

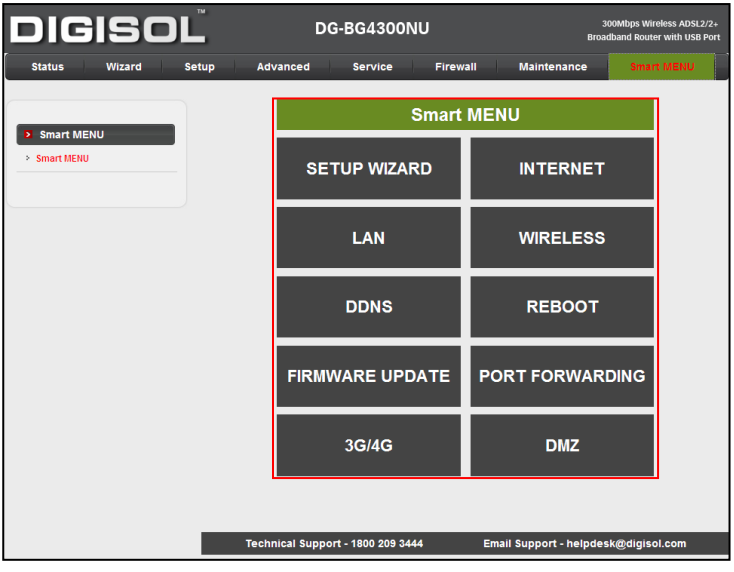
Choose **Diagnostics > Diag-Test**, the page shown in the following figure appears. In this page, you can test the DSL connection. You can also view the LAN status connection and ADSL connection.



Click **Run Diagnostic Test** to start testing.

5 Smart Menu

Smart Menu consists of all the mostly used features like: Setup wizard, Internet, LAN, Wireless, DDNS, Reboot, Firmware Update and Port forwarding as shown below for quick configuration. This is like an easy to use menu.



6 Appendix

6.1 Technical Specifications

Flash: 2MB

SDRAM: 16MB

Antennas: Two fixed dipole 5dBi antennas

Network Interface: 1 x RJ11 interface for ADSL Line

4 x 10/100 Mbps UTP LAN ports

Wireless Features Standard: IEEE802.11b/g/n

Frequency band: 2.400~2.4835GHz

Wireless output power: 11B: 16±1.5dBm

11G: 15±1.5dBm

11N: 14±1.5dBm

Wireless security: WEP (64/128 bit), WPA-PSK (TKIP/AES), WPA2-PSK (TKIP/AES), WPA/WPA2 Mixed Mode, WPS (PBC/PIN Mechanism), Disable SSID broadcast

Wireless data rate: 802.11b: 1/2/5.5/11Mbps

802.11g: 6/9/12/24/36/48/54Mbps

802.11n (20MHz): up to 144 Mbps

802.11n (40MHz): up to 300 Mbps

Status LEDs: Power

WLAN

DSL

USB

Internet

WPS

LAN ports 1~4

Environment Requirements: Operating Temperature 0℃—40℃

Storage Temperature -20℃—70℃

Operating Humidity 10%—95%, non-condensing

Storage Humidity 5%—95%, non-condensing

Power Supply: 12 V DC, 1A Switching power adapter

Physical Dimension: Net Dimensions (L x W x H): 181 x 124 x 29 mm

Gross Dimensions (L x W x H): 268 x 166 x 82 mm

Net Weight: 215 g

Gross Weight: 609 g

☎ 1800-209-3444 (Toll Free)
helpdesk@digisol.com sales@digisol.com www.digisol.com

6.2 Troubleshooting

If you encounter any problem when you are using this wireless broadband router, don't panic. Before you call your dealer of purchase for help, please check this troubleshooting section, the solution of your problem could be very simple, and you can solve the problem yourself.

Scenario	Solution
All the indicators are off.	• Check the connection between the power adapter and the power socket. • Check whether the power switch is turned on.
No proper LAN connection indication.	Check the following: • The connection between the device and the PC, the hub, or the switch. • The running status of the computer, hub, or switch. • The cables connecting the device and other devices. Use a cross-over cable to connect the device to a computer. Use a straight-through cable to connect the device to a hub or a switch.
ADSL indicator is not on.	• Check the connection between the ADSL interface of the device and the socket.
Unable to access Internet even when the ADSL indicator is on.	Ensure that the following information is entered correctly. • VPI and VCI • User name and password
Cannot access the web page.	Choose **Start > Run** from the desktop. Enter **Ping 192.168.1.1 (the default IP address of the device)** in the DOS window. If the web configuration page still cannot be accessed, check the following configuration. • The type of network cable. • The connection between the device and the computer. • The TCP/IP properties of the network card of the computer.

6.3 Glossary

Default Gateway (Router): Every non-router IP device needs to configure a default gateway IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it to the destination.

DHCP: Dynamic Host Configuration Protocol. This protocol automatically gives every computer on your home network an IP address.

DNS Server IP Address: DNS stands for Domain Name System, which allows Internet servers to have a domain name (such as www.Broadbandrouter.com) and one or more IP addresses (such as 192.34.45.8). A DNS server keeps a database of Internet servers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing "Broadbandrouter.com" into your Internet browser), the user is sent to the proper IP address. The DNS server IP address used by the computers on your home network is the location of the DNS server your ISP has assigned to you.

DSL Modem: DSL stands for Digital Subscriber Line. A DSL modem uses your existing phone lines to transmit data at high speeds.

Ethernet: A standard for computer networks. Ethernet networks are connected by special cables and hubs, and move data around at up to 10/100 million bits per second (Mbps).

Idle Timeout: Idle Timeout is designed so that after there is no traffic on the Internet for a pre-configured amount of time, the connection will automatically get disconnected.

IP Address and Network (Subnet) Mask: IP stands for Internet Protocol. An IP address consists of a series of four numbers separated by periods, which identifies a single, unique Internet computer host in an IP network.

Example: 192.168.2.1. It consists of 2 portions: the IP network address and the host identifier.

The IP address is a 32-bit binary pattern, which can be represented as four cascaded decimal numbers separated by ".": aaa.aaa.aaa.aaa, where each "aaa" can be anything from 000 to 255, or as four cascaded binary numbers separated by ".": bbbbbbbb.bbbbbbbb.bbbbbbbb.bbbbbbbb, where each "b" can either be 0 or 1.

A network mask is also a 32-bit binary pattern, and consists of consecutive leading

1's followed by consecutive trailing 0's, such as

11111111.11111111.11111111.00000000. Therefore sometimes a network mask can also be described simply as "x" number of leading 1's.

When both are represented side by side in their binary forms, all bits in the IP address that correspond to 1's in the network mask become part of the IP network address, and the remaining bits correspond to the host ID.
For example, if the IP address for a device is, in its binary form,

11011001.10110000.10010000.00000111, and if its network mask is,
11111111.11111111.11110000.00000000

It means the device's network address is

11011001.10110000.10010000.00000000, and its host ID is,

00000000.00000000.00000000.00000111.

This is a convenient and efficient method for routers to route IP packets to their destination.

ISP Gateway Address: (see ISP for definition). The ISP Gateway Address is an IP address for the Internet router located at the ISP's office.

ISP: Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

LAN: Local Area Network. A LAN is a group of computers and devices connected together in a relatively small

area (such as home or office). Your home network is considered a LAN.

MAC Address: MAC stands for Media Access Control. A MAC address is the hardware address of a device connected to a network. MAC address is a unique identifier for a device with an Ethernet interface. It is comprised of two parts: 3 bytes of data that correspond to the Manufacturer ID (unique for each manufacturer), plus 3 bytes that are often used as the product's serial number.

NAT: Network Address Translation. This process allows all the computers on your home network to use one IP address. Using the broadband router's NAT capability, you can access Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

Port: Network Clients (LAN PC) uses port numbers to distinguish one network application/protocol over another. Below is a list of common applications and protocol/port numbers:

Application	Protocol	Port Number
Telnet	TCP	23
FTP	TCP	21
SMTP	TCP	25
POP3	TCP	110
H.323	TCP	1720
SNMP	UDP	161
SNMP Trap	UDP	162
HTTP	TCP	80
PPTP	TCP	1723
PC Anywhere	TCP	5631
PC Anywhere	UDP	5632

PPPoE: (Point-to-Point Protocol over Ethernet.) Point-to-Point Protocol is a secure data transmission method originally created for dial-up connections; PPPoE is for Ethernet connections. PPPoE relies on two widely accepted standards, Ethernet and the Point-to-Point Protocol. It is a communications protocol for transmitting information over Ethernet between different manufacturers.

Protocol: A protocol is a set of rules for interaction agreed upon between multiple parties so that when they interface with each other based on such a protocol, the interpretation of their behavior is well defined and can be made objectively, without confusion or misunderstanding.

Router: A router is an intelligent network device that forwards packets between different networks based on network layer address information such as IP addresses.

Subnet Mask: A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers (e.g. 255.255.255.0) configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must be assigned by InterNIC).

TCP/IP, UDP: Transmission Control Protocol/Internet Protocol (TCP/IP) and Unreliable Datagram Protocol (UDP). TCP/IP is the standard protocol for data transmission over the Internet. Both TCP and UDP are transport layer protocols. TCP performs proper error detection and error recovery, and thus is reliable. UDP on the other hand is not reliable. They both run on top of the IP (Internet Protocol), a network layer protocol.

WAN: Wide Area Network. A network that connects computers located in geographically separate areas (e.g. different buildings, cities, countries). The Internet is a wide area network.

Web-based management Graphical User Interface (GUI): Many devices support a graphical user interface that is based on the web browser. This means the user can use the familiar Netscape or Microsoft Internet Explorer to Control/configure or monitor the device being managed.

This product comes with limited life time warranty. For further details about warranty policy and Product Registration, please visit support section of **www.digisol.com**