

EnGenius®

xtra range

User Manual



ESR900
version 1.0

Dual Band Wireless N900 Router
with Gigabit Ports and USB

IMPORTANT

To install this router, please refer to the **Quick Start Guide** included in the product packaging.

To activate and use EnShare™ refer to the document **“Using EnShare”** also in the product packaging.

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Chapter 1

Product Overview



Product Overview

Key Features

- Dual Band Wireless N900 IEEE 802.11 a/b/g/n
- Up to 900 Mbps with both the 2.4 GHz & 5 GHz frequency bands
- Built-in 4-Port Gigabit Switch for optimal audio/visual streaming
- USB Port to share and access media content in the home or when you're away from home with EnShare™
- Xtra Range™ Technology for better signal coverage throughout your home
- Next Generation IPv6 Compliant
- Parental Controls
- Up to 8 Guest Access settings (4 per frequency band)
- Industry-standard Wireless Encryption and Security
- VPN Server Support Lite-Business Applications
- Easy Setup Wizard

Robust and Reliable Wireless Performance

The ESR900 is a Dual-Band Wireless N900 Router with a built-in 4-port Gigabit Ethernet switch. This cost effective router can connect to DSL or cable modems to provide high performance Internet access for desktop or laptop computers, tablets, smartphones and a wide variety of home entertainment devices, like HDTVs, set top boxes, Blu-ray players and game consoles.

The router's concurrent dual band design enables users to connect numerous wireless devices to it, giving them the option to use the less congested 5 GHz frequency for bandwidth



intensive applications like streaming HD video throughout the home from one device to another. The ESR900 is an Xtra Range router that provides enhance wireless signal coverage throughout the home.

Maximum data rates are based on IEEE 802.11 standards. Actual throughput and range may vary depending on many factors including environmental conditions, distance between devices, radio interference in the operating environment, and mix of devices in the network. EnGenius Technologies, Inc. EnShare™ supports both FAT32 and NTFS USB formats. Transfer speeds of data from your router-attached USB storage device to a remote/mobile device may vary based on Internet uplink and downlink speeds, bandwidth traffic at either send or receive locations, the data retrieval performance of the attached storage device or other factors. EnGenius does not guarantee compatibility with all USB drives. EnGenius does not warrant its products or EnShare from loss of data or loss of productivity time. Features and specifications subject to change without notice. Trademarks and registered trademarks are the property of their respective owners. For United States of America: Copyright ©2013 EnGenius Technologies, Inc. All rights reserved.

Product Overview

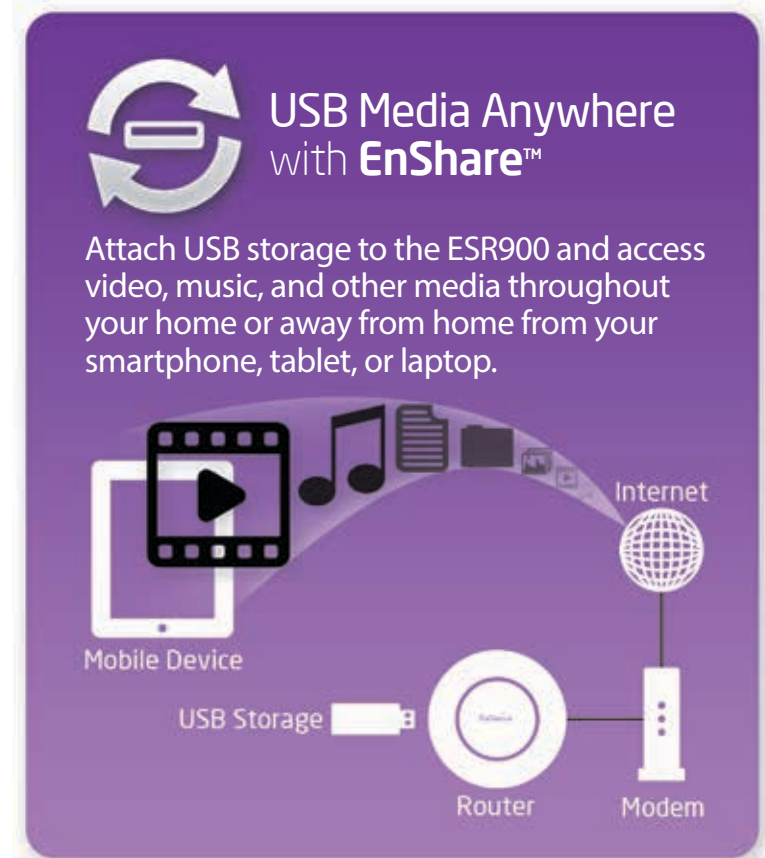
A Media Sharing Platform

The ESR900 is designed to access and share media for devices on the home network. In addition to connecting home entertainment components to any of its available Gigabit Ethernet ports, the ESR900 also includes a USB port for attaching a USB storage device so wireless devices in the home or away from the home can access media content wherever there is an available Internet connection through EnShare™ - Your Personal Media Cloud.

EnShare is available as an Internet portal for accessing stored media connected to the USB port of the router (See the Using EnShare document in the product packaging). EnShare will also be available as an app for Apple iOS devices (iPads, iPods and iPhones) and Android-based devices (smartphones, tablet PCs, Kindle and other mobile readers) soon. The apps will be available through Apple iTunes Store and Google Play respectively.

Industry-standard Wireless Security

The router supports a variety of security features and mechanisms including industry-standard WPA/WPA2 wireless encryption to prevent unauthorized access to your network. It also includes a built-in SPI (Stateful Packet Inspection) firewall to help prevent attacks from malicious software (malware) from the Internet. The router also supports IPv6.



More Guest Access Options

The ESR900 also includes up to eight (8) separate and discrete Guest Access options allowing the router's administrator to assign different names (SSIDs-Service Set Identifiers) for each login to the home network so friends or visitors can access the user's Internet connection without accessing personal data stored on networked computers in the home.

Technical Specifications

Device Interface

Gigabit WAN Port
4 Gigabit LAN Ports
USB2.0 Port
Push Button for WPS
Reset Button

IEEE Standards

802.11a/b/g/n
Up to 900 Mbps wireless speed
with both the 2.4 and 5 GHz frequency bands
802.3i/u/ab

LED Indicators

Power
WLAN (Wireless Connection)
Internet

Package Contents

ESR900 Router
Power Adapter (12V 1.5 A)
Quick Start Guide
RJ45 Ethernet Cable

Power Specification

External Power Adapter
DC In, 12V 1.5A

Certifications

FCC/CE/IC

Physical/Environmental Conditions

Operating Temperature: 0°~40° Celsius
Humidity: 90% or less (non-condensing)
Storage Temperature: -20°~60° Celsius
Humidity: 95% or less (non-condensing)

Software Features

Frequency Bands

2.400~2.484 GHz (11b/11g/11n)
5.18~5.82 GHz (11a/11n)

Operating Mode

AP Router/WDS

Wireless Features

Auto Channel Selection
Output Power Control
WMM (Wireless Multimedia)
MSSID (Multiple SSID)

Security

WEP/WPA-PSK/WPA2-PSK
TKIP/AES
Hidden SSID
MAC Address Filtering
802.1X Authentication
DDoS
DHCP Server/Client
SPI (Stateful Packet Inspection)
NAT
Port Forwarding
DMZ
Port Mapping/Triggering
VPN Server (PPTP/L2TP)
VPN Client (PPTP/L2TP)
VPN Pass-through (PPTP/L2TP/IPSec)
Rule Based (IP Address Ranges, Port Block ICMP)
VPN Tunnel (Maximum 5)
QoS
IP Filtering
Port Filtering
DDNS
IPv6 Pass-through
MAC Clone
Traffic Monitor
WAN Type: PPPoE/DHCP/Static IP
8 USB Features: SAMBA

Physical Interface

Dimensions and Weights

Weight: 0.5 lbs.

Diameter: 6.36"

Height: 1.64"



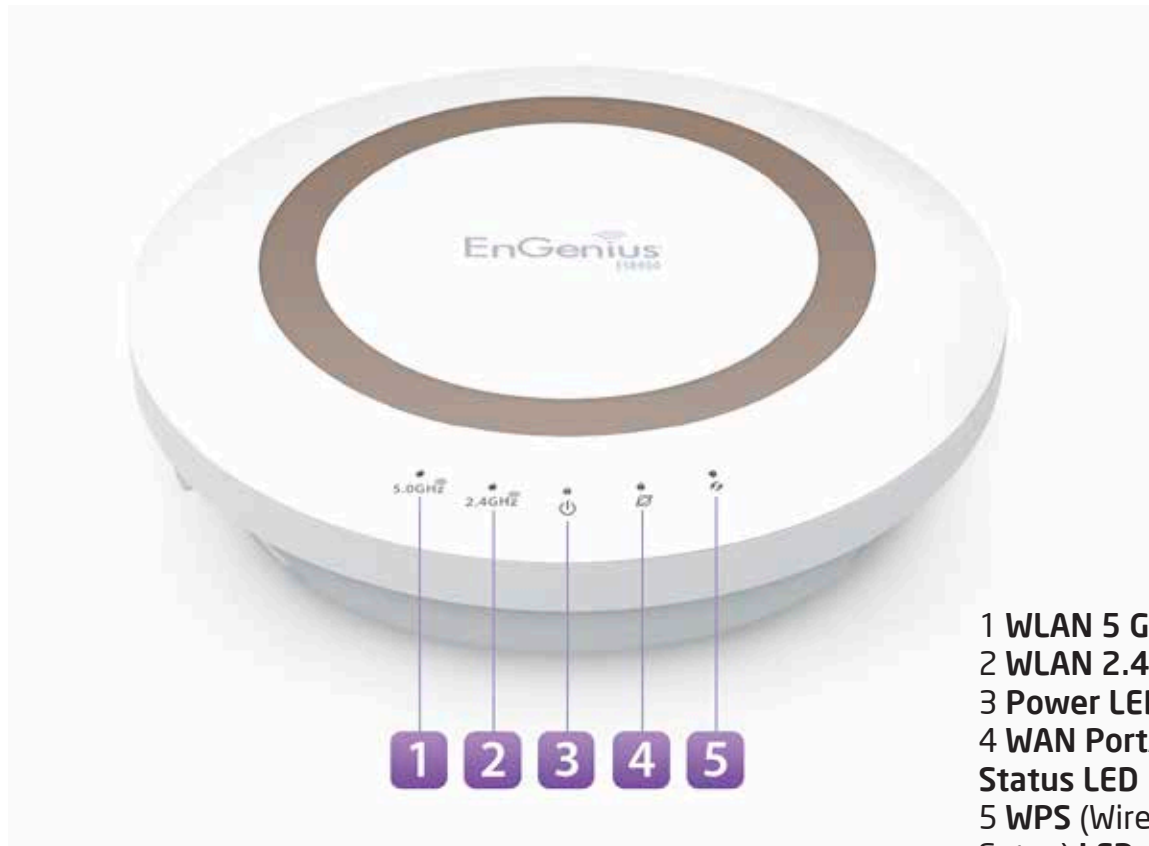
When considering the placement of the router

remember the following:

- It must be close to an electrical outlet.
- For optimal wireless connectivity, place the router near the center of the room if possible, at a high level



Other electronic devices and some architectural construction materials or impediments may interfere with the wireless signal(s) of the router and reduce its range or coverage. Try to minimize the number of walls or floors that the router's signal needs to penetrate to connect to other wireless devices.



- 1 WLAN 5 GHz LED
- 2 WLAN 2.4 GHz LED
- 3 Power LED
- 4 WAN Port/(Internet) Status LED
- 5 WPS (Wireless Protected Setup) LED



- 6 **DC Power Jack** – connects the ESR Series Router to its DC power adapter
- 7 **WAN Port** – connects the ESR Router to a cable or DSL modem to access the user's broadband (Internet) connection
- 8 **LAN Ports (1 - 4)** – for connecting home entertainment components, computers or other Ethernet-enabled devices using Ethernet cables
- 9 **Reset Button** – For resetting the router to its factory default settings by pressing button for more than 11 seconds or until the Power LED starts flashing.
- 10 **USB Port** for connecting a USB Storage Device
- 11 **WPS Button** – Wi-Fi Protected Setup button. To associate another WPS-enabled client device (computer, wireless media bridge, USB adapter, etc.) press the WPS button for 2 to 5 seconds on the router while also pressing the WPS button on the end device.

Chapter 2

Controlling the Router Through Its Web Configuration Interface



Logging In

During the **Quick Start Guide** procedure, you should have successfully logged into the router's **Web Configuration user interface** (essentially the router's operating system that controls how it operates) and established some initial settings and controls for the router.

If you wish to change the router's settings (establish a new username and password for the person who manages and maintains the router, set Parental Controls, establish a Guest Access-SSID setting for visitors, or any number of other settings) you can log into the Web Configuration again through the web browser (Internet Explorer, Safari, Chrome, Firefox) on your computer or tablet device.

To do this, enter the router's default IP address of **192.168.0.1** into your browser's address window.

1. At the login screen enter your username and a password
2. Click Login to continue.



The default login settings are:

username: admin

password: admin

It's highly recommended that, if you haven't done so already, to change these default names, so your router and the devices connected to it on your home network are more secure.

Viewing the Web Configuration Dash Board

The Home Page screen of the Web Configuration interface, or dashboard, provides access to the router's settings and controls.

Home Page

The screenshot displays the EnGenius ESR900 Web Configuration Dashboard. The header includes the EnGenius logo and the text "ESR900" and "EnGenius Wireless Router ESR900". A navigation bar at the top right contains icons for Home, Setup Wizard, Network Settings, USB Storage Sharing, IP Cam Viewer, Language, and Logout. The main content area is divided into two columns:

System Information:

Application Version	1.0.0
Hardware Version	1.0.0
Serial Number	134211653
MAC Address	00:02:6F:FD:8A:BB
Attain IP Protocol	Static IP
IP Address	67.130.140.147
Subnet Mask	255.255.255.0
Default Gateway	67.130.140.100
IPv6 Connection Type	Link Local
IPv6 WAN Default Gateway	
LAN IPv6 Link-Local Address	FE80::202:6FFF:FEFD:8BBA
DHCP-PD	Disabled
Wireless 2.4GHz :	
SSID_1	EnGeniusFD8BBA
Security Type	WPA Pre-Shared key
Wireless 5GHz :	
SSID_1	EnGeniusFD8BBB
Security Type	WPA Pre-Shared key

Status:

- WAN Connected (Globe icon)
- WAN Cable Connected (Cable icon)
- Wireless 2.4GHz On / Wireless 5GHz On (Wi-Fi icon)

Device List:

- FA1516-R-PC (Laptop icon)

Home Page

The **Home Page** displays the areas within the Web Configuration to which you can navigate: **Setup Wizard**, **Network Settings**, **USB Storage Sharing**, **IP Cam Viewer**, **Language**, and **Logout**

Home

The Home link takes you back to the dashboard screen no matter where you are in the Web Configuration interface.

Setup Wizard

The Setup Wizard link starts the wizard that automatically configures the router.

Network Settings

The Network Settings link displays the menus to manually configure the router.

USB Storage Sharing

The USB Storage Sharing link displays the menus to access shared storage devices connected to the router.

IP Cam Viewer

The IP Cam Viewer link displays the menus to view an IP camera connected to the network.

Language

The Language link displays the menu to set the OSD language.

Logout

The Logout link closes the router's Web Configuration interface from any screen.

Web Menus Overview

System

View and edit settings that affect system functionality.

Operation Mode

Configure the device to be a router or WDS access point.

Status

Displays the summary of the current system status.

Schedule

Schedule services to start and stop at specific times or intervals.

Event Log

View recorded system operations and network activity events.

Monitor









View the current network traffic bandwidth usage.

Language

Configure the application menu and GUI language.

IP Camera

View the IP cameras connected to the ESR Series Router.

System	
	Status
	LAN
	DHCP
	Log
	Monitor
	Language
	IP Camera
	Internet
	Wireless
	Parental Control
	Guest Network
	IPv6
	Firewall
	VPN
	USB Port

Internet

View and edit settings that affect network connectivity.

Status

Displays a summary of the Internet status and type of connection.

Dynamic IP

Setup a dynamic IP connection to an ISP (Internet Service Provider).

Static IP

Setup a static IP connection to an ISP.

PPPoE









Setup a PPPoE connection to an ISP.

PPTP

Setup a PPTP connection to an ISP.

L2TP

Setup an L2TP connection to an ISP.

 System
 Internet
Status
Dynamic IP
Static IP
PPPoE
PPTP
L2TP
DS-Lite
 Wireless 2.4GHz
 Wireless 5GHz
 Parental Control
 Guest Network
 IPv6
 Firewall

Wireless 2.4 GHz

View and edit settings for 2.4 GHz wireless network connectivity.

Status

View the current wireless connection status and related information.

Basic

Configure the minimum settings required to setup a wireless network connection.

Advanced

Configure the advanced network settings.

Security

Configure the wireless network security settings.

Filter













Establish a list of client devices (computer, tablets, smartphones, printers, etc.) based on their MAC (Media Access Control) numbers that are allowed to wirelessly connect to the 2.4 GHz network.

WPS

Automates the connection between a wireless device and your encrypted router using an 8-digit PIN.

Client List

View the 2.4 GHz wireless devices currently connected to the network.

 System
 Internet
 Wireless 2.4GHz
Basic
Advanced
Security
Filter
WPS
Client List
 Wireless 5GHz
 Parental Control
 Guest Network
 IPv6
 Firewall
 VPN
 USB Port
 Advanced
 Tools

Wireless 5 GHz

View and edit settings for 5 GHz wireless network connectivity.

Status

View the current wireless connection status and related information.

Basic

Configure the minimum settings required to setup a wireless network connection.

Advanced

Configure the advanced network settings.

Security

Configure the wireless network security settings.

Filter













Establish a list of client devices (computer, tablets, smartphones, printers, etc.) based on their MAC (Media Access Control) numbers that are allowed to wirelessly connect to the 5 GHz network.

WPS

Automates the connection between a wireless device and your encrypted router using an 8-digit PIN.

Client List

View the 5 GHz wireless devices currently connected to the network.

 System
 Internet
 Wireless 2.4GHz
 Wireless 5GHz
Basic
Advanced
Security
Filter
WPS
Client List
 Parental Control
 Guest Network
 IPv6
 Firewall
 VPN
 USB Port
 Advanced
 Tools

Parental Controls













View and edit settings for parental controls.

Wizard

Enable or disable the Parental Controls function. The menu also provides information for configuring parental control policies.

Web Monitor

The menu provides a log of the events for defined parental control policies.

 System
 Internet
 Wireless 2.4GHz
 Wireless 5GHz
 Parental Control
Wizard
Web Monitor
 Guest Network
 IPv6
 Firewall
 VPN
 USB Port
 Advanced
 Tools

Guest Network

View and edit settings for a guest network.

Selection














Enable or disable the Guest Network function.

DHCP Server Setting

Configure the Guest Network DHCP server settings.

DHCP Client List

Configure the Guest Network client list.

 System
 Internet
 Wireless 2.4GHz
 Wireless 5GHz
 Parental Control
 Guest Network
Selection
DHCP Server Setting
DHCP Client List
 IPv6
 Firewall
 VPN
 USB Port
 Advanced 
 Tools

IPv6

View and edit settings for the IPv6 protocol.

Basic

Allows you to enable or disable the IPv6 and IPv6 Pass-through functions.

Status

Shows IPv6 LAN connection details.

Static IPv6

Configure the IPv6 protocol.

Auto Configuration

Configure the IPv6 by obtaining the information through the ISP provider.

PPPoE













Configure the PPPoE network protocol, obtain information from your ISP (Internet Service Provider).

6to4

Allows IPv6 packets to be transmitted over an IPv4 network.

Link Local

Configure the IPv6 link local address.

 System
 Internet
 Wireless 2.4GHz
 Wireless 5GHz
 Parental Control
 Guest Network
 IPv6
Basic
Status
Static IPv6
Auto Configuration
PPPoE
6to4
Link Local
 Firewall
 VPN
 USB Port
 Advanced
 Tools

Firewall

View and edit settings for the network firewall.

Basic

Enable or disable the network firewall.

Advanced

Configure virtual private network (VPN) packets.

DMZ













Redirect packets from the WAN port IP address to a particular IP address on the LAN.

DoS

Enable or disable blocking of DoS (Denial of Service) attacks.

ACL

Configure access control lists.

 System
 Internet
 Wireless 2.4GHz
 Wireless 5GHz
 Parental Control
 Guest Network
 IPv6
 Firewall
Basic
Advanced
DMZ
DoS
ACL
 VPN
 USB Port
 Advanced
 Tools

VPN

View and edit settings for VPN tunnelling.

Status

View the status of current VPN tunnels.

Profile Setting














Manually configure VPN tunnels.

User Setting

Configure users, user ID and password combinations, and assign access to specific VPN tunnels.

Wizard

Automatically configure VPN tunnels with guidance from the software.

 System
 Internet
 Wireless 2.4GHz
 Wireless 5GHz
 Parental Control
 Guest Network
 IPv6
 Firewall 
 VPN
Status
Profile Setting
User Setting
Wizard
 USB Port
 Advanced
 Tools

USB Port

For viewing and editing settings for storage sharing.

EnShare™

Enables or disables the EnShare remote access function.

File Sharing













Enables or disables the Samba sharing function.

File Server

Enables and configures the File Server function.

DLNA

Enables the discovery of DLNA devices (some HDTVs, game consoles, some set top boxes/media players, Blu-ray players, some smartphones, and network attached storage) on the home network.

	System
	Internet
	Wireless 2.4GHz
	Wireless 5GHz
	Parental Control
	Guest Network
	IPv6
	Firewall
	VPN
	USB Port
	EnShare
	File Sharing
	File Server
	DLNA
	Advanced
	Tools

Advanced

View and configure advanced system and network settings.

NAT

Enable or disable Network Address Translation (NAT).

Port Mapping

Re-direct a range of service port numbers to a specified LAN IP address.

Port Forwarding

Configure server applications to send and receive data from specific ports on the network.

Port Triggering

Configure applications that require multiple connections and different inbound and outbound connections.

ALG

Configure the application layer gateway (ALG).

UPnP

Enable or disable Universal Plug and Play (UPnP) functionality.

IGMP

Enable or disable the Internet Group Multicast Protocol (IGMP).

QoS

Configures the network quality of service (QoS) setting by prioritizing the uplink and downlink bandwidth.

Routing

Configure static routing.

WOL (Wake On LAN)

Configure Wake on LAN to turn on a computer over the network.

Tools

For viewing and configuring the router's operating system and network tools settings.

Admin

For setting the administrator's password used to log into the router.

Time

For configuring the system time on the router.

DDNS

Maps a static domain name to a dynamic IP address.

Diagnosis

To perform a Ping test to verify whether a specific device is connected to the LAN.

Firmware













For updating the router's firmware.

Backup

For loading or saving the configuration settings to or from a backup file or to restore the router to its factory default settings.

Reset

Reboots the router.

 System
 Internet
 Wireless 2.4GHz
 Wireless 5GHz
 Parental Control
 Guest Network
 IPv6
 Firewall
 VPN
 USB Port
 Advanced
 Tools
Admin
Time
DDNS
Diagnosis
Firmware
Back-up
Reset

Chapter 3

Installation Setup Wizard

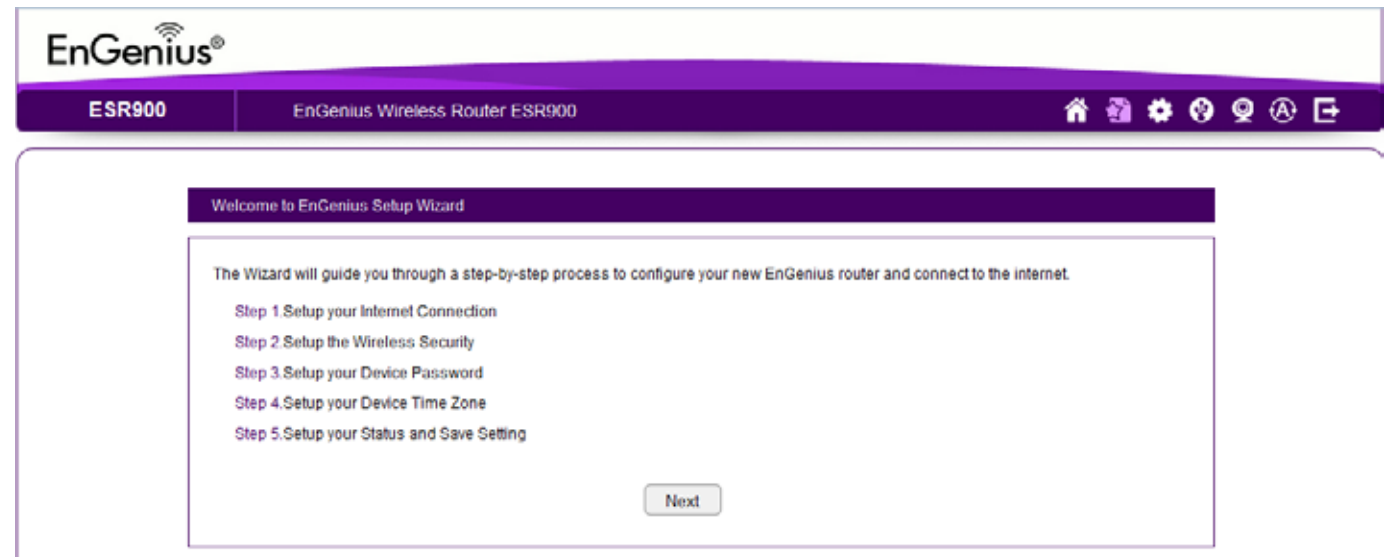
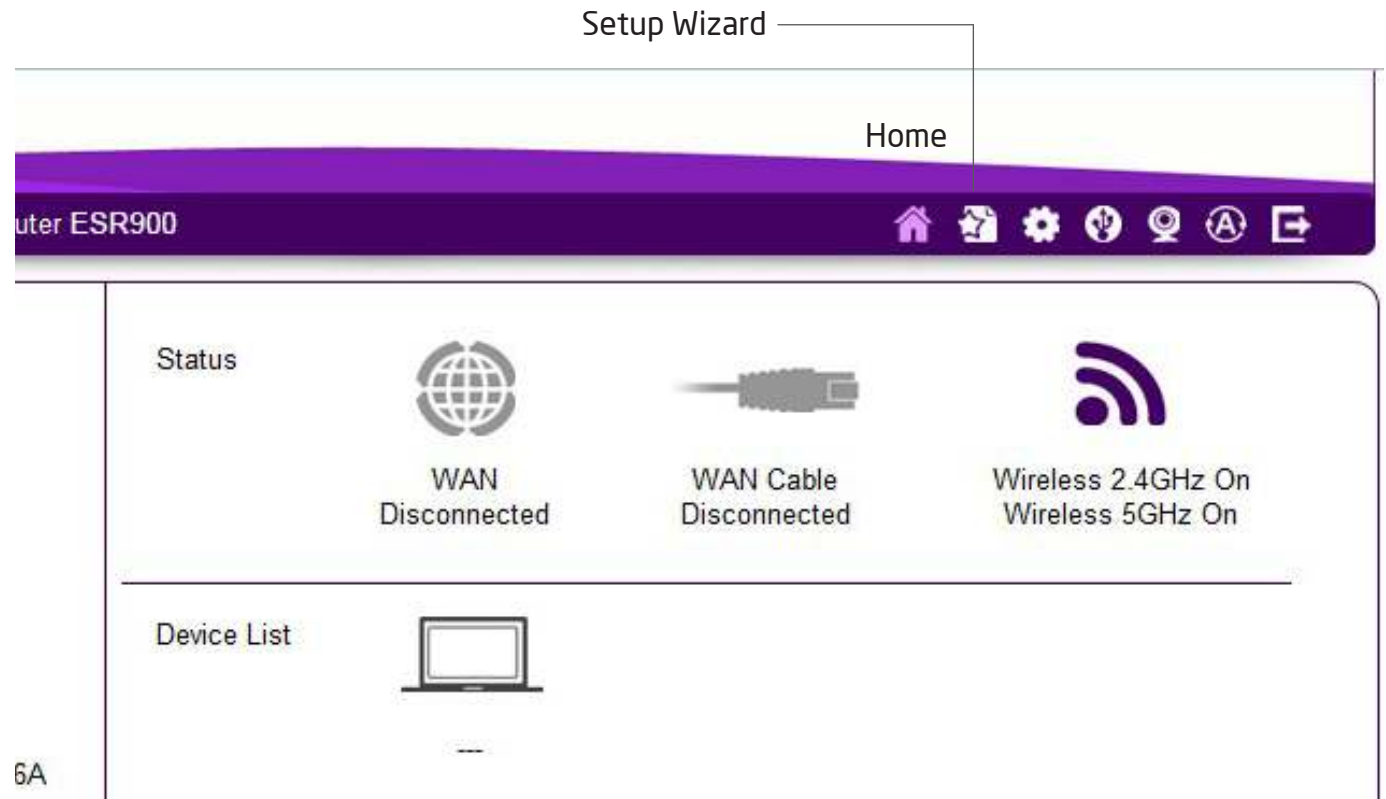


Internet Setup Wizard

Use the Wizard to detect and set up the type of Internet connection you need, to set up a secure wireless connection, to create an administrator password to secure the device, or set the router's date and time properties.

To use the Internet Setup Wizard, follow these steps:

1. Click the **Wizard** button to show the Wizard start screen.
2. Click **Next** to continue with the setup procedure.



Setting Up Your Internet Connection

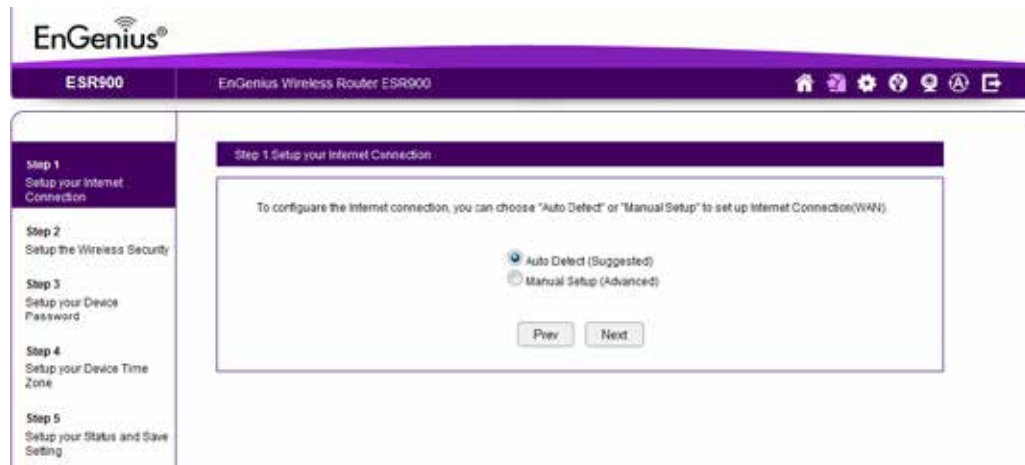
1. Decide how to set up the Internet connection.



Note: It is recommended to let the device setup the Internet connection automatically.

- Select **Auto Detect** to let the Wizard set up the Internet connection.
- Select **Manual Setup** to set the properties yourself.

2. Click **Next** to continue or **Prev** to return to the previous screen.



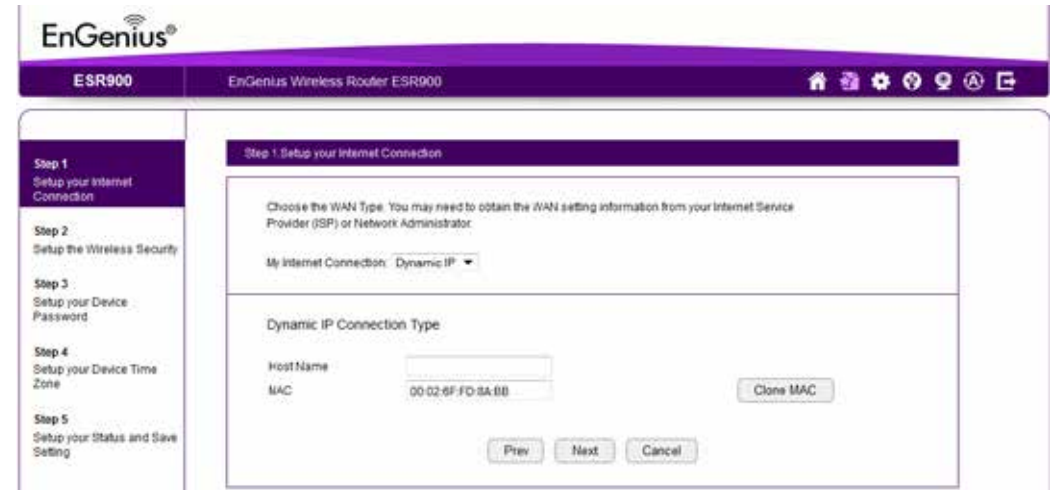
If you selected **Manual Setup**, follow these steps:

3. Select the Internet connection type and enter the connection properties.



Note: The connection types available are static IP, PPPoE, Dynamic IP, PPTP, and L2TP.

4. Click **Next** to continue, **Prev** to return to the previous screen, or **Cancel** to stop the procedure.



Setting Your Wireless Security

Setting wireless encryption for 2.4 GHz and 5 GHz networks.

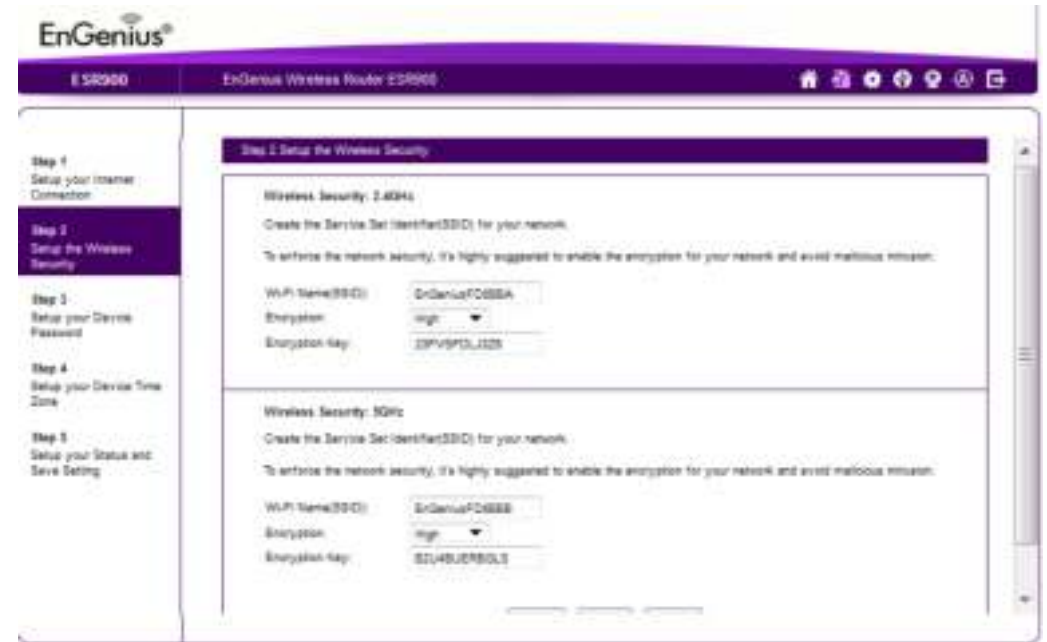
To encrypt the wireless signals for either or both of the frequency bands in the ESR900 router, follow these steps:

1. Enter the router name in the wireless Name (SSID) text field.
2. Select the security level from the Encryption dropdown list.



Important: To ensure the network is secure, it is recommended to select High for an encryption level.

3. Enter a password in the Encryption Key text field.
4. Repeat steps 1 through 3 to encrypt the 5 GHz band
5. Click **Next** to continue, **Prev** to return to the previous screen, or **Cancel** to stop the procedure.



Setting Your Router's Administrator Password

Set up a password to log into the ESR Series Router.

1. Enter a password in the **New Password** text field.
2. Enter the same password in the **Repeat New Password** text field.
3. Click **Prev** to return to the previous screen, **Skip** to skip this procedure, **Next** to continue, or **Cancel** to stop the procedure.

The screenshot shows the EnGenius ESR900 router configuration web interface. The top navigation bar includes the EnGenius logo, the model number 'ESR900', the device name 'EnGenius Wireless Router ESR900', and several utility icons (home, star, gear, USB, location, refresh, and back). A left sidebar lists five steps: Step 1 (Internet Connection), Step 2 (Wireless Security), Step 3 (Device Password), Step 4 (Device Time Zone), and Step 5 (Status and Save Setting). Step 3 is currently active and highlighted in purple. The main content area for Step 3 is titled 'Step 3. Setup your Device Password' and contains the following elements: a heading 'Create a password to login and access your router', a grey note box stating 'Note: This is not the password provided by Internet Service Provider (ISP).', two text input fields labeled 'New Password' and 'Repeat New Password', and four buttons at the bottom: 'Prev', 'Skip', 'Next', and 'Cancel'.

Setting Your Router's Time Zone

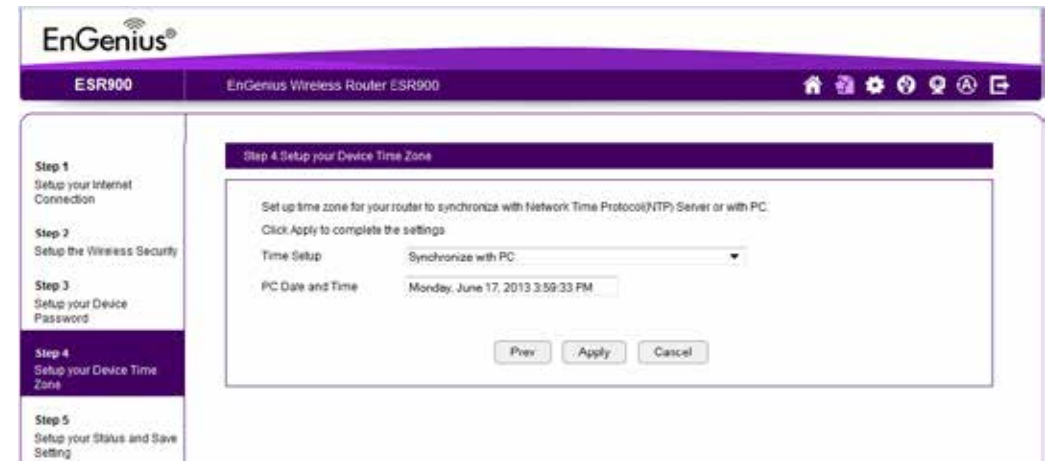
Setup date and time synchronization on the ESR Series Router with a computer or an Network Time Protocol (NTP) server.

To synchronize date and time settings with a computer, follow these steps:

1. Select **Synchronize with PC** (computer) from the **Time Setup** dropdown list. The date and time values are shown in the **PC Date and Time** text field.
2. Click **Prev** to return to the previous screen, **Apply** to save the settings, or **Cancel** to stop the procedure.

To synchronize the date and time settings with an NTP server, follow these steps:

1. Select **Synchronize** with NTP Server from the **Time Setup** dropdown list.
2. Select a time zone value from the **Time Zone** dropdown list.
3. Enter an IP address or domain name of an NTP server in the **NTP Server** text field.



4. Click the **Enable Daylight Savings** check box to enable or disable daylight savings time.
5. Select the date and time values when daylight savings time starts in the **Start Time** dropdown lists.

6. Select the date and time values when daylight savings time ends in the **End Time** dropdown lists.

The screenshot shows the EnGenius ESR900 router configuration interface. The top navigation bar includes the EnGenius logo, the model number 'ESR900', and the text 'EnGenius Wireless Router ESR900'. A sidebar on the left lists five steps: Step 1 (Setup your Internet Connection), Step 2 (Setup the Wireless Security), Step 3 (Setup your Device Password), Step 4 (Setup your Device Time Zone), and Step 5 (Setup your Status and Save Setting). Step 4 is currently active and highlighted in purple. The main content area for Step 4 contains the following text: 'Set up time zone for your router to synchronize with Network Time Protocol(NTP) Server or with PC. Click Apply to complete the settings.' Below this text are two input fields: 'Time Setup' with a dropdown menu set to 'Synchronize with PC', and 'PC Date and Time' with a text box containing 'Monday, June 17, 2013 3:59:33 PM'. At the bottom of the form are three buttons: 'Prev', 'Apply', and 'Cancel'.

7. Click **Prev** to return to the previous screen, **Apply** to save the settings, or **Cancel** to stop the procedure.

Status and Save Settings

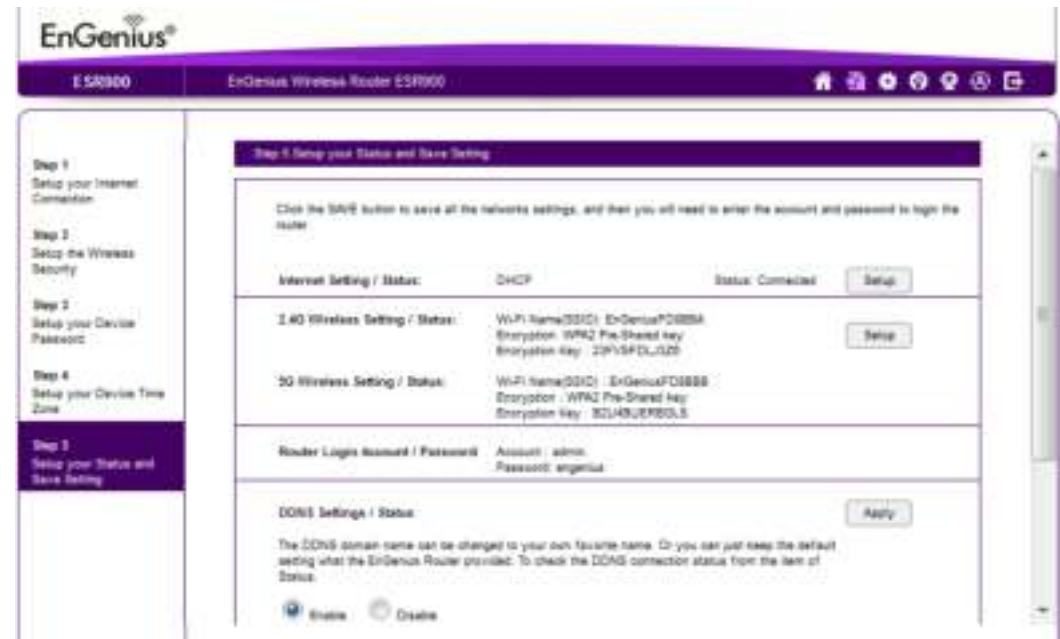
This screen lets you review, change and save your Internet connection, save wireless security settings or setup up a user-specified name for the default EnGenius DDNS service.

To review or modify the device settings, follow these steps:

1. Review the settings shown on the screen for the Internet connection, 2.4 GHz and 5 GHz networks, and the router administrator login.
2. You can change settings to the Internet connection and wireless network settings by clicking the **Setup** button.

You may wish to use a different name that's easier to remember for the default EnGenius DDNS service used for the **EnShare™** feature. To specify your own DDNS name, follow these steps:

3. The **Enable** option should be selected by default.
 - a. Enter the name in the **Domain Name** text field.
 - b. Select a time interval to refresh the DNS records from the **Refresh** dropdown list.
 - c. Click **Apply** to save the DDNS name you have entered.
4. Click **Save** to exit the Web Configuration interface. The router will reboot (restart) to apply all the settings you've specified. Devices connected to the router will temporarily lose their Internet connection. The reboot may take several seconds before the router and your Internet connection are once again available.



WARNING! Selecting **Disable** in the DDNS Settings/ Status field will disconnect the router's connection to the default EnGenius DDNS server and as a result will disable the EnShare feature which lets you access media from a USB storage device connected to your ESR pod router when you're away from your home.

Chapter 4

Basic Network Settings

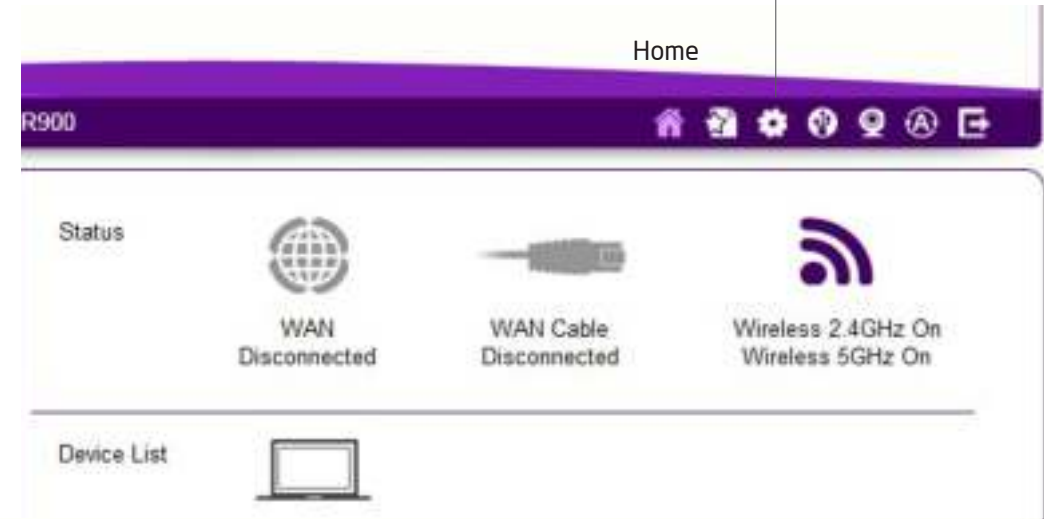


Network Settings

Viewing System Status

To see a more detailed view of the router's status than the information displayed on the Home page of the Web Configuration interface, from the Home Page click on **Network Settings** button in the upper navigation bar.

Network Settings
Home



The screenshot shows the 'Network Settings' page for an EnGenius ESR900 router. The page has a purple header with the EnGenius logo and 'ESR900 EnGenius Wireless Router ESR900'. A left sidebar contains a menu with 'System' selected. The main content area is divided into two sections: 'System' and 'WAN Settings'. The 'System' section lists various parameters like Model, Mode, Uptime, Date/Time, and Versions. The 'WAN Settings' section shows IP configuration details. A 'TIPS' box on the right provides additional context about the status page.

System	
Model	ESR900
Mode	AP Router
Uptime	9 min 39 sec
Current Date/Time	2013/06/17 18:14:01
Hardware Version	1.0.0
Serial Number	134211653
Application Version	1.0.0

WAN Settings	
Attain IP Protocol	Static IP
IP Address	67.130.140.145
Subnet Mask	255.255.255.0
Default Gateway	67.130.140.100
MAC Address	00:02:6F:FD:8A:BB
Primary DNS	4.2.2.2

TIPS
Status page shows the summary of current system status including System (hardware/ software version, date/ time), Internet connection (WAN Settings), Wired (LAN Settings) and Wireless Network (WLAN) information.

Status

To view the Status settings, click **System** then click **Status**.

On the **Status** page, you can view a summary of the current router system status including the router's (hardware/software version, date/time), wired network (LAN) and wireless network (WLAN) information.

Model

The model name of the ESR Series Router.

Mode

The operating mode of the ESR Series Router.

Uptime

The amount of time the ESR Series Router has been connected for the current session.

Current Date/Time

The current system date and time.

Hardware Version

The hardware version number of the router.

Serial Number

The serial number of the router (required for customer service or support).

Application Version

The version of the router's firmware.



Note: To update the router's firmware, visit www.engeniustech.com and go to the product page for your router, then select the Downloads tab at the bottom of the web page to see if a newer version of the firmware is available.

WAN Settings

Attain IP Protocol

Displays the IP protocol in use for the router. It can be a dynamic or static IP address.

IP Address

The router's IP address as designated by an ISP (Internet Service Provider).

Subnet Mask

The router's WAN subnet mask as designated by an ISP provider.

Default Gateway

The router's gateway address as designated by an ISP provider.

MAC Address

The router's WAN MAC (Media Address Control) address. The router's MAC address is located on the label on the bottom panel of the router and is unique for each router.

Primary DNS

The primary DNS of an ISP provider.

Secondary DNS

The secondary DNS of an ISP provider.

WAN Settings	
Attain IP Protocol	Dynamic IP Address
IP Address	192.168.1.76
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.254
MAC Address	00:02:6F:FD:8B:D1
Primary DNS	192.168.1.254
Secondary DNS	---

LAN Settings

IP Address

The router's local IP address. The default LAN IP address is

http://192.168.0.1

To access the Web Configuration interface for the router, type this address into the address (URL) field of your web browser.

This can only be done in the same physical location where the router resides (your home network).

Subnet Mask

The router's local Subnet Mask.

DHCP Server

The DHCP setting status (Default: Enabled). The DHCP (Dynamic Host Control Protocol) is a software mechanism in your router that assigns IP addresses to wired and wireless devices on your network, for example, a computer, printer, tablet or HDTV on your network may be assigned an IP address of http://192.168.0.104. Note how the address is essentially an extension or addition of your router's IP address.

MAC Address

The router's unique MAC address.

LAN Settings

IP Address	192.168.0.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
MAC Address	00:02:6F:FD:8C:6A

WLAN Settings

Channel

The communications channel used by all stations, or computing devices, on the network.

ESSID

The ID value of a set of one or more interconnected basic service sets (BSSs).

Security

The security setting status (Default: Disabled).

BSSID

The unique ID of the BSS using the above channel value on this router. The ID is the MAC address of the BSSs access point.

Associated Clients

The number of clients associated (actively linked to the router via a wireless or wired/Ethernet connection) with this SSID.

WLAN Settings		
Wireless 2.4GHz Setting		
Channel		11
SSID_1		
ESSID		esr900
Security		WPA2 Pre-Shared key
BSSID		00:02:6F:FD:8C:6A
Associated Clients		1
Wireless 5GHz Setting		
Channel		44
SSID_1		
ESSID		EnGeniusFD8C6B
Security		WPA2 Pre-Shared key
BSSID		00:02:6F:FD:8C:6B
Associated Clients		0

Guest Network

Guest Network

The guest network status. (Default: Disabled)

IP Address

The Guest Network's LAN IP address.

Subnet Mask

The Guest Network's local subnet mask.

DHCP Server

The Guest Network DHCP setting status (Default: Enabled).

Guest Network Interface

The SSID (Service Set Identifier) of the Guest Network.

<u>Guest Network Setting</u>	
Guest Network	Enabled
IP Address	192.168.169.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
Guest Network Interface	SSID_2

Configuring the LAN (Local Area Network)

The settings on this page allow you to configure the wired network settings. Devices connected to the router's Ethernet ports comprise its LAN. The router's IP is defined in the **IP Address** field. The default setting of the DHCP server is set to **Enabled** so that networked clients (computers, home entertainment components, printers, etc.) will automatically be assigned IP addresses by the router.

More advanced users may wish to configure the DNS server settings to meet their specific requirements. Changing the settings in this section are not necessary for most situations.

To view the LAN settings, click **System**, then click **LAN**.



Note: Keep the router's default values if you are uncertain of the settings values.

LAN IP	
IP Address	192.168.0.1
IP Subnet Mask	255.255.255.0
802.1d Spanning Tree	Disabled
LAN DHCP Server	
DHCP Feature	Enabled
Lease Time	120 Days
Static IP	192.168.0.10
Subnet	08 00 20
Domain Name	LAN-00
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

LAN IP

IP Address

For configuring the router's LAN IP address.

IP Subnet Mask

For configuring the router's LAN Subnet Mask

802.1d Spanning Tree

Spanning Tree is disabled by default. When enabled, Spanning Tree prevents network loops (transmissions won't pass the same node twice or several times to reach the destination).

Note:

The default device IP address is 192.168.0.1.

DHCP Server

The DHCP server assigns IP addresses to the devices on the LAN.

DHCP Server

Enable or disable the DHCP server (Default: Enabled).

Lease Time

Configure the amount of time each allocated IP address can be used by a client.

Start IP

The first IP address in the range of addresses assigned by the router.

End IP

The last IP address in the range of addresses assigned by the router.

Domain Name

The domain name of the router.

LAN IP	
IP Address	<input type="text" value="192.168.1.53"/>
IP Subnet Mask	<input type="text" value="255.255.255.0"/>
802.1d Spanning Tree	<input type="text" value="Disabled"/>
DHCP Server	
DHCP Server	<input type="text" value="Disabled"/>
Lease Time	<input type="text" value="One Day"/>
Start IP	<input type="text" value="192.168.1.100"/>
End IP	<input type="text" value="192.168.1.200"/>
Domain Name	<input type="text" value="ESR600"/>

Configuring Dynamic Host Configuration Protocol

This window allows you to view and configure Dynamic Host Configuration Protocol (DHCP) addresses.



WARNING! Do not modify the settings in this section without a thorough understanding of the parameters.

To view the DHCP settings, click **System** then click **DHCP**.

DHCP Client Table

Displays the connected DHCP clients whose IP addresses are assigned by the DHCP server of the router.

IP Address

Displays the IP address of the static DHCP client device in the table.

MAC Address

Displays the MAC address of the static DHCP client device in the table.

Expiration Time

The date and time when the current DHCP address is no longer valid.

Click **Refresh** to update the table.

Current Static DHCP Table

No.	IP Address	MAC Address	Select
1	192.168.0.99	00:02:6F:FD:8D:C5	<input checked="" type="checkbox"/>

Delete Selected

Delete All

Reset

Apply

Cancel

Enable Static DHCP IP

There are reasons why you may want to enable a static IP address on a client device on your ESR router's network.

On occasion, if there are power outages or if you've reconfigured the settings on your ESR router and reboot (restart) it to apply the new settings, the previous IP address that the router's DHCP server assigned to one or more devices on the network may have changed. Some client devices on your network may also have web configuration interfaces (set top boxes, Network Attached Storage, etc.) that are accessible from the router's assigned IP address from its DHCP server, so the client device can be managed. Thus if the client device's IP address changes from time to time, it may be difficult linking to it unless you find its new address through the ESR router's DHCP Client Table.

If you wish to avoid this, then the Enable Static DHCP IP option allows you set a static (essentially a permanent) address for given client devices on your network.

To do so, select the **Enable Static DHCP IP** option.

IP Address

Enter the IP address of the device to add as a static DHCP client.

Enable Static DHCP IP

IP Address	MAC Address
<input type="text"/>	<input type="text"/>
<input type="button" value="Add"/>	<input type="button" value="Reset"/>

MAC Address

Enter the MAC address of the device to add as a static DHCP client.

Click **Add** to add the device to the static DHCP client table or **Reset** to return the table to its previous state.

Current Static DHCP Table

Allows you to view the active static DHCP IP addresses that have been manually assigned to client devices with their corresponding MAC addresses.

No. (Number)

Displays the ID of the static DHCP client device in the table.

IP Address

Displays the IP address of the static DHCP client device in the table.

MAC Address

Displays the MAC address of the static DHCP client device in the table.

Select

Click to select static DHCP client devices to be deleted.

Click **Delete Selected** to remove a selected address. Click **Delete All** to remove all addresses from the table. Click **Reset** to return the table to its previous state. Click **Apply** to save the settings or **Cancel** to discard changes.

Current Static DHCP Table

No.	IP Address	MAC Address	Select
1	192.168.0.99	00:02:8F:FD:8D:C5	<input checked="" type="checkbox"/>

Configuring Event Logging

The logging service records and displays important system information and activity on the network. The events are stored in a memory buffer with older data overwritten by newer when the buffer is full.

To view the Log settings, click **System** then click **Log**.

Log Message List

Select **Enable Logging to Syslog Server**

Click **Save** to start logging information to the system.

Log Message window

Shows the current system operations and network activity.

Click **Save** to save the message list to a text file, **Clear** to discard message from the memory buffer, or **Refresh** to clear previous messages and write new messages to the memory buffer.

Click **Apply** to save changes.

SysLog Settings

Enable Logging To Syslog Server :

```
day 0 10:59:05 [SYSTEM]: NET, start Firewall
day 0 10:59:05 [SYSTEM]: NET, start NAT
day 0 10:59:05 [SYSTEM]: NET, stop Firewall
day 0 10:59:05 [SYSTEM]: NET, stop NAT
day 0 10:59:04 [SYSTEM]: DHCP, start DHCP Server
day 0 10:59:03 [SYSTEM]: DHCP, DHCP Server Stopping
day 0 10:52:53 [SYSTEM]: DHCP Server, Sending ACK of 192.168.0.10
day 0 10:52:52 [SYSTEM]: DHCP Server, Sending OFFER of 192.168.0.
day 0 10:46:58 [SYSTEM]: DDNS, EnGenius -- :****
day 0 10:46:35 [SYSTEM]: QoS, Stopping
day 0 10:46:35 [SYSTEM]: NET, start IPv6 Firewall
day 0 10:46:35 [SYSTEM]: NET, stop IPv6 Firewall
day 0 10:46:35 [SYSTEM]: IPv6, Link Local mode
day 0 10:46:34 [SYSTEM]: DNS, start DNS Proxy
day 0 10:46:33 [SYSTEM]: QoS, Stopping
```

Save Clear Refresh

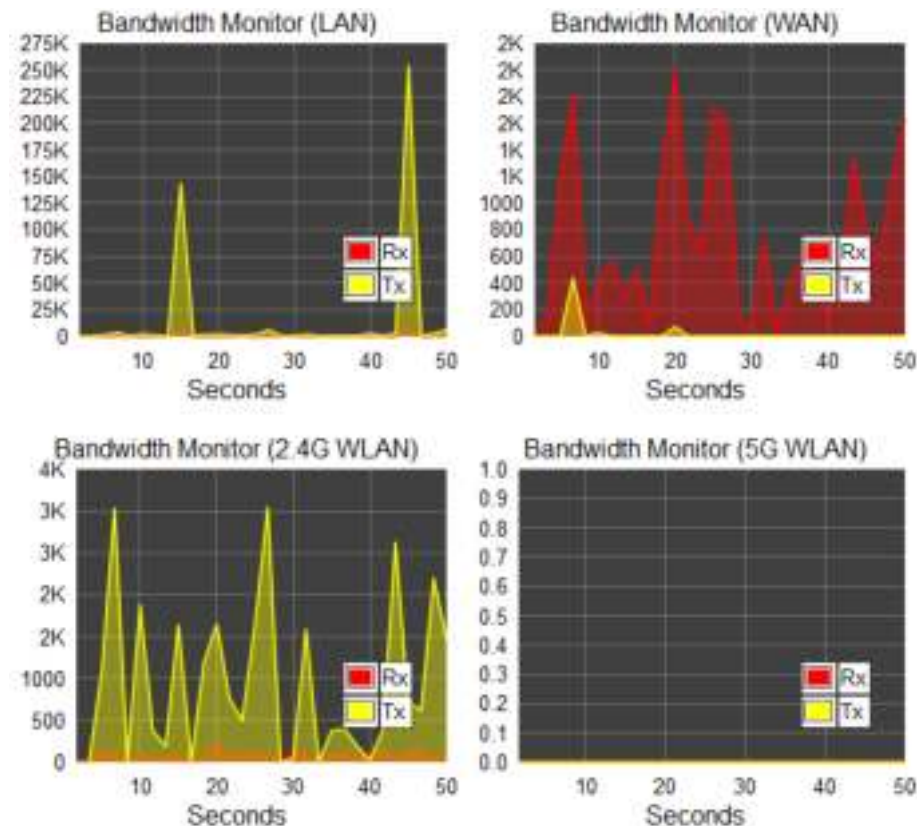
Apply

Monitoring Bandwidth Usage

This tool allows you to view real-time bandwidth usage for WAN (Wide Area Network - or Internet), LAN (Local Area Network) and WLAN (Wireless Local Area Network) traffic. For the ESR900, it shows both the bandwidth traffic in both the 2.4 and 5 GHz frequency bands.

To view the Bandwidth Monitor settings, click **System**, then click **Monitor**.

The screens display the active bandwidth usage for both the LAN and WLAN networks as well as the bandwidth being used on the WAN connection.



Configuring the System Language

The ESR router's Web Configuration interface supports multiple languages.

To view the Language settings, click **System**, then click **Language**.

Select the system language you wish to use from the drop-down menu.

Multiple Language



Configuring IP Cameras

This ESR router supports up to four (4) EnGenius IP Cameras simultaneously. If no IP Camera is detected, please check that the IP Camera's IP address and UPnP client are configured correctly.

To view the IP Camera settings, click **System**, then click **IP Camera**.

Before starting this procedure, you must connect your EnGenius IP camera to the network.

Make sure the camera is powered on.

Click the **Refresh** button to view a listing of available devices.



Note: The "IP Camera" function supports EnGenius IP Camera products only.



Configuring Internet Settings

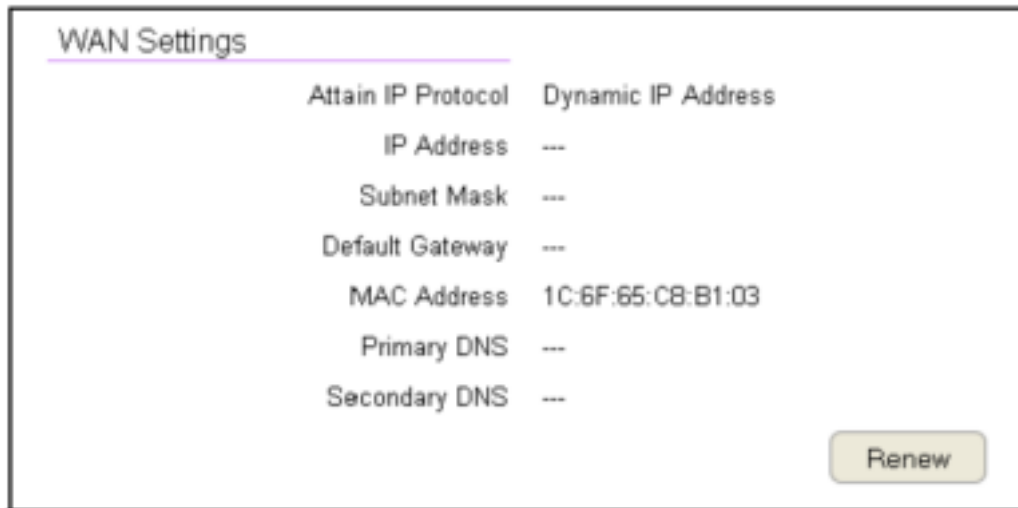
View Internet Status

The WAN Settings, or Internet Status, page shows a summary of the current Internet connection information. This section is also shown on the System Status page.

To view the Status settings, click **Internet**, then click **Status**.

WAN Settings

To view the WAN Settings, click Internet then select Status.



Attain IP Protocol

Display the IP Protocol type used for the ESR Series Router (Dynamic IP Address or Static IP Address).

IP Address

The router's WAN IP address.

Subnet Mask

The router's WAN subnet mask.

Default Gateway

The ISP's gateway IP address.

MAC Address

The router's WAN MAC address. The router's MAC address is located on the label on the back side of the router.

Primary DNS

The primary DNS address of an ISP provider.

Secondary DNS

The secondary DNS address of an ISP provider.

Configuring Dynamic IP

Dynamic IP addressing assigns a different IP address each time a device connects to an ISP (Internet Service Provider) and most commonly used by cable ISPs.

To view the Dynamic IP, click **Internet** then select **Dynamic IP**.

Dynamic IP

Hostname

Assign a name for the Internet connection type. This field can be blank.

MTU (Maximum Transmission Unit)

Allows you to configure the MTU. The MTU specifies the largest packet size permitted for an internet transmission. The factory default MTU size for Dynamic IP (DHCP) is 1500. The MTU size can be set between 512 and 1500.

Clone MAC

Enter the MAC address of your computer's (or tablet's) network embedded Network Interface Card (NIC) in the MAC address field and click **Clone MAC**.



Note: Some ISP providers require registering the MAC address of the Network Interface Card (NIC) connected directly to the cable or DSL modem. Clone MAC masks the router's MAC address with the MAC address of the computer's NIC.

Hostname	<input type="text"/>
MTU	<input type="text" value="1500"/> (512<=MTU Value <=1500)
MAC Address	<input type="text" value="1C:6F:65:C8:B1:03"/> <input type="button" value="Clone MAC"/>

DNS Servers

The DNS server translates a domain or website name into a URL (Uniform Resource Locator), or Internet address. There are two options to choose from: From ISP or User-Defined. Select From ISP to retrieve the DNS address value from the ISP; select User-Defined to assign a custom DNS server address.

DNS Server

Configure the type of DNS server. (Default = From ISP)

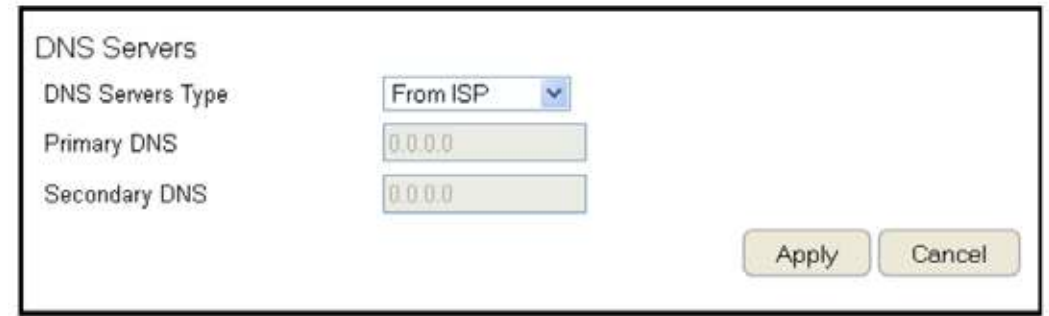
First DNS Server

Configure the first, or primary, DNS server.

Second DNS Server

Configure the second, or secondary, DNS server.

Click **Apply** to save the settings or **Cancel** to discard the changes.



The screenshot shows a dialog box titled "DNS Servers". It contains three rows of configuration options:

- DNS Servers Type:** A dropdown menu with "From ISP" selected.
- Primary DNS:** A text input field containing "0.0.0.0".
- Secondary DNS:** A text input field containing "0.0.0.0".

At the bottom right of the dialog box, there are two buttons: "Apply" and "Cancel".

Configuring Static IP

Setting a static IP address allows an administrator to set a specific IP address for the router and guarantees that it can not be assigned a different address.

To view the Static IP settings, click **Internet**, then click **Static IP**.

Static IP

IP Address

The router's WAN IP address.

Subnet Mask

The router's WAN subnet mask.

Default Gateway

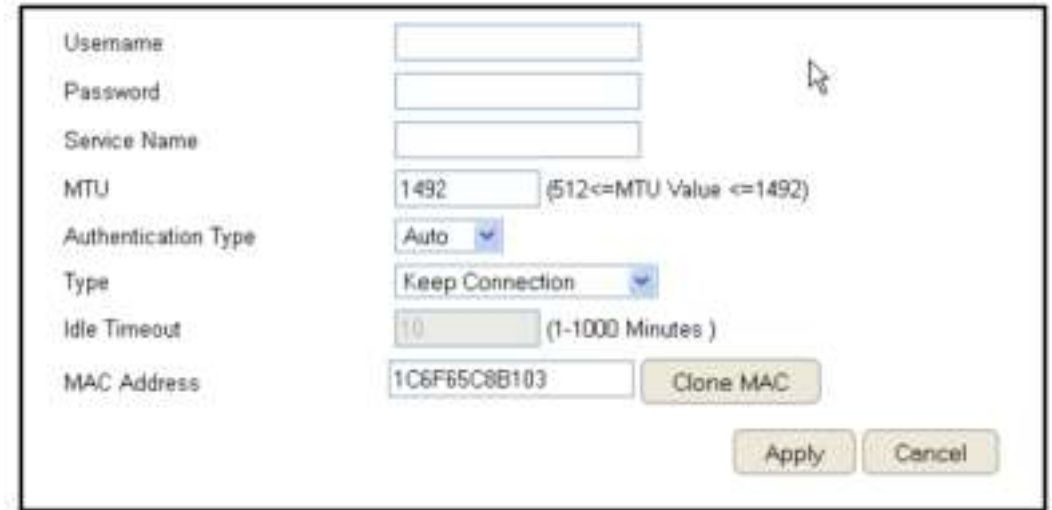
The WAN gateway address.

Primary DNS

The primary DNS server address.

Secondary DNS

The secondary DNS server address.



The screenshot shows a configuration window for Static IP. It contains the following fields and controls:

- Username: [Empty text box]
- Password: [Empty text box]
- Service Name: [Empty text box]
- MTU: [1492] (512<=MTU Value <=1492)
- Authentication Type: [Auto] (dropdown menu)
- Type: [Keep Connection] (dropdown menu)
- Idle Timeout: [10] (1-1000 Minutes)
- MAC Address: [1C6F65C8B103] [Clone MAC button]
- [Apply button] [Cancel button]

MTU (Maximum Transmission Unit)

The MTU specifies the largest packet size permitted for an internet transmission. The factory default MTU size for static IP is 1500. The MTU size can be set between 512 and 1500.

MAC Address

The router's MAC address.

Click **Apply** to save the settings or **Cancel** to discard the changes.

Configuring PPPoE

Point-to-Point Protocol over Ethernet (PPPoE) is used mainly by ISPs that provide DSL modems to connect to the Internet.

To view the PPPoE settings, click **Internet**, then click **PPPoE**.

Username

Enter the username assigned by an ISP.

Password

Enter the password assigned by an ISP.

Service Name

Enter the service name of an ISP (optional).

MTU (Maximum Transmission Unit)

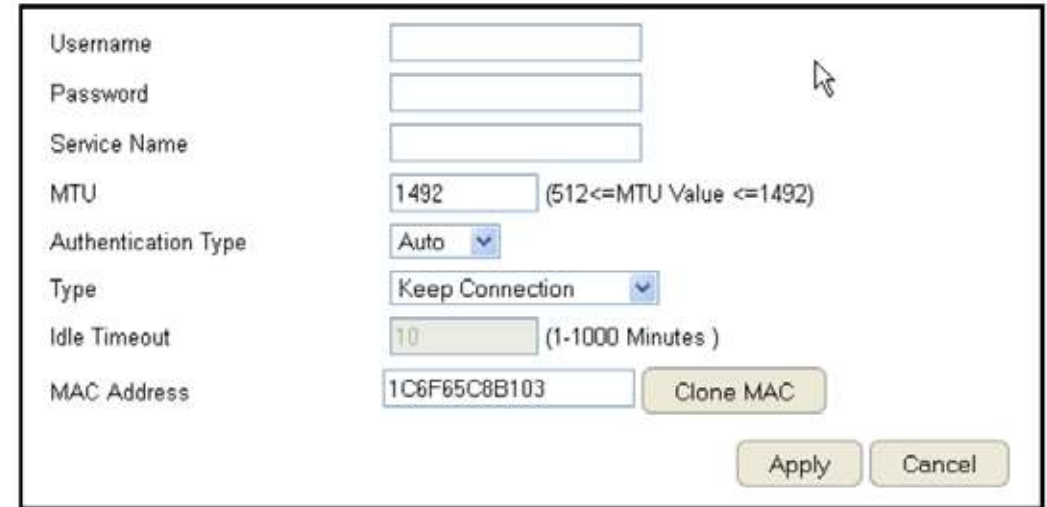
Enter the (MTU). The MTU specifies the largest packet size permitted for an internet transmission (PPPoE default: 1492). The MTU size can be set between 512 and 1492.

Authentication Type

Select the type of authentication provided by the ISP: Auto, PAP, or CHAP. If unsure of the best setting, select Auto or check with your Internet Service Provider.

Type

Configure the connection type between the router and the ISP. Select one of the following: **Keep Connection**, **Automatic Connection** or **Manual Connection**.



The screenshot shows a configuration window for PPPoE. It contains the following fields and controls:

- Username: [Empty text box]
- Password: [Empty text box]
- Service Name: [Empty text box]
- MTU: [1492] (512<=MTU Value <=1492)
- Authentication Type: [Auto] (dropdown menu)
- Type: [Keep Connection] (dropdown menu)
- Idle Timeout: [10] (1-1000 Minutes)
- MAC Address: [1C6F65C8B103] [Clone MAC button]
- [Apply button] [Cancel button]

Idle Timeout

Configure the maximum idle time (1 to 1,000 minutes) allowed for an inactive connection.

Clone MAC

Enter the MAC address of the devices' network interface card (NIC) in the MAC address field and click Clone MAC.



Note: Some ISP providers require registering the MAC address of the network interface card (NIC) connected directly to the cable or DSL modem. Clone MAC masks the router's MAC address with the MAC address of the computer's NIC.

Click **Apply** to save the settings or **Cancel** to discard the changes.

Configuring PPTP

PPTP (Point-to-Point Tunneling Protocol) is used in association with virtual private networks (VPNs). There are two parts to a PPTP connection: the WAN interface settings and the PPTP settings.

To view the PPTP settings, click **Internet**, then click **PPTP**.

WAN Interface Settings

Dynamic IP Address

WAN Interface Type

Select Dynamic IP Address to assign an IP address provided by an ISP.

Hostname

Enter a host name of an ISP. (optional).

Clone MAC

Enter the MAC address of the computer's (or tablet's) embedded Network Interface Card (NIC) in the MAC address field and click **Clone MAC**.



Note: Some ISP providers require registering the MAC address of the network interface card (NIC) connected directly to the cable or DSL modem. Clone MAC masks the router's MAC address with the MAC address of the computer's NIC.

WAN Interface Settings

WAN Interface Type

Hostname

MAC Address

PPTP Settings

User Name

Enter the username assigned by your ISP.

Password

Enter the password assigned by your ISP.

Service IP Address

Enter the PPTP server IP address provided by your ISP.

Connection ID

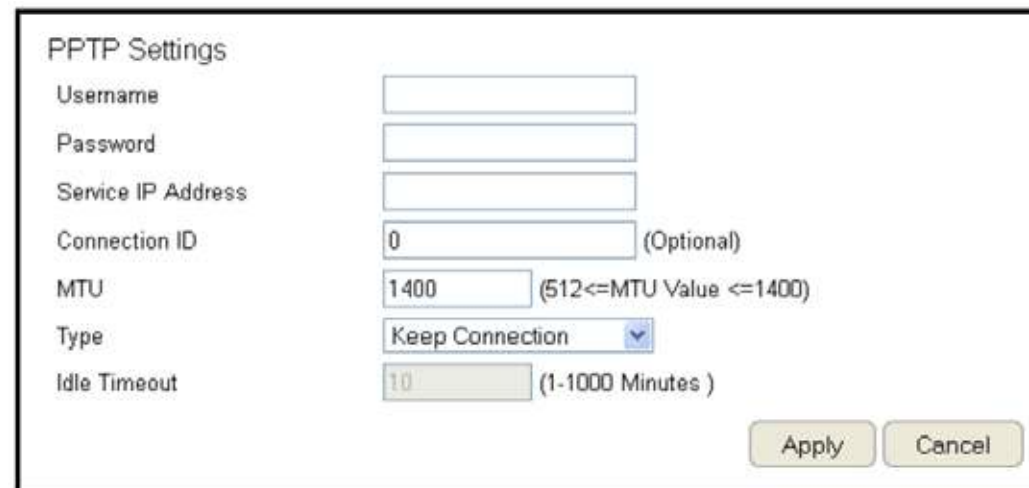
Enter the connection ID provided by your ISP (optional).

MTU (Maximum Transmission Unit)

Enter MTU. The MTU specifies the largest packet size (Default: 1462) permitted for an Internet transmission. The MTU size can be set between 512 and 1492.

Type

Configure the connection type between the router and the ISP. Select one of the following: **Keep Connection**, **Automatic Connection** or **Manual Connection**.



The screenshot shows a 'PPTP Settings' dialog box with the following fields and values:

Field	Value	Notes
Username		
Password		
Service IP Address		
Connection ID	0	(Optional)
MTU	1400	(512<=MTU Value <=1400)
Type	Keep Connection	Dropdown menu
Idle Timeout	10	(1-1000 Minutes)

Buttons: Apply, Cancel

Idle Timeout

Configure the maximum amount of time, in minutes, allowed for inactive Internet connection. The Internet connection will be dropped when the maximum idle time is reached. Valid values are between one and one thousand.

Click **Apply** to save the settings or **Cancel** to discard the changes.

Configuring L2TP

L2TP (Layer 2 Tunneling Protocol) is used in association with VPNs (Virtual Private Networks). There are two parts to a L2TP connection:

1. The WAN interface settings and
2. The L2TP settings.

To view the L2TP settings, click **Internet**, then click **L2TP**.

WAN Interface Settings

Dynamic IP Address

WAN Interface Type

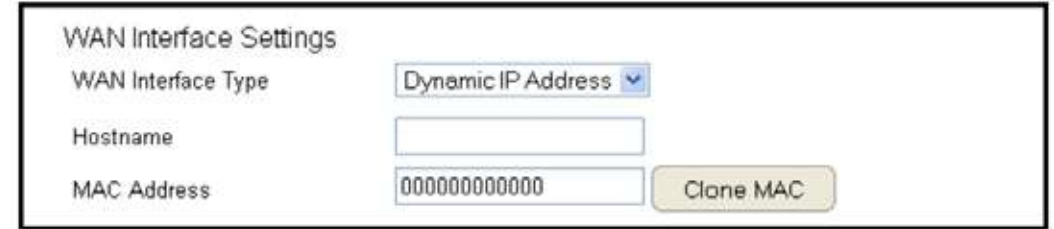
Select Dynamic IP Address to assign an IP address provided by an ISP.

Hostname

Enter a host name of an ISP (optional).

Clone MAC

Enter the MAC address of your computer's embedded Network Interface Card (NIC) in the MAC address field and click **Clone MAC**.



The screenshot shows a configuration window titled "WAN Interface Settings". It contains three main fields: "WAN Interface Type" with a dropdown menu set to "Dynamic IP Address", "Hostname" with an empty text input field, and "MAC Address" with a text input field containing "000000000000". To the right of the MAC address field is a button labeled "Clone MAC".



Note: Some ISP providers require registering the MAC address of the network interface card (NIC) connected directly to the cable or DSL modem. Clone MAC masks the router's MAC address with the MAC address of the computer's NIC.

L2TP Settings

Username

Enter the username assigned by an ISP.

Password

Enter the password assigned by an ISP.

Service IP Address

Enter the L2TP server IP address provided by an ISP.

Connection ID

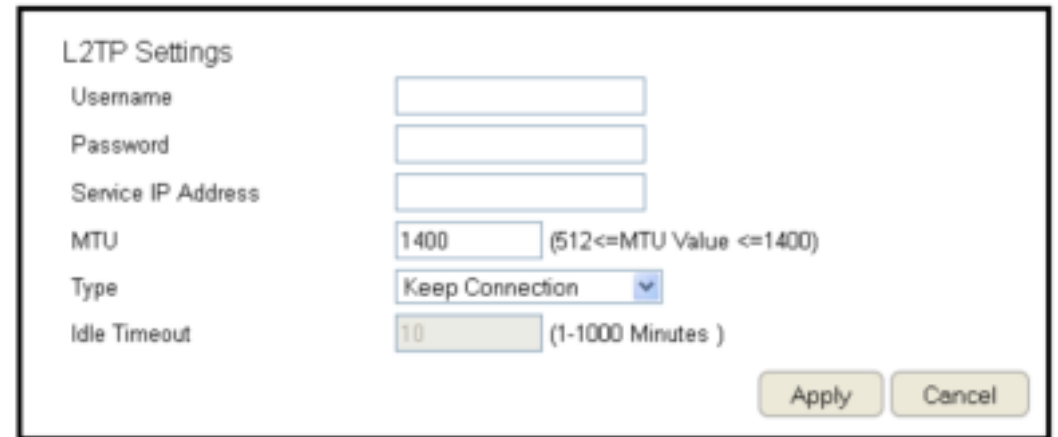
Enter the connection ID provided by an ISP (optional).

MTU (Maximum Transmission Unit)

Enter MTU. The MTU specifies the largest packet size (Default: 1460) permitted for an Internet transmission. The MTU size can be set between 512 and 1492.

Type

Configure the connection type between the router and the ISP. Select one of the following: **Keep Connection**, **Automatic Connection** or **Manual Connection**.



The screenshot shows a window titled "L2TP Settings" with the following fields and options:

- Username:
- Password:
- Service IP Address:
- MTU: (512<=MTU Value <=1400)
- Type: (dropdown menu)
- Idle Timeout: (1-1000 Minutes)

At the bottom right, there are two buttons: "Apply" and "Cancel".

Idle Timeout

Configure the maximum amount of time, in minutes, allowed for inactive Internet connection. The Internet connection will be dropped when the maximum idle time is reached. Valid values are between one and one thousand.

Click **Apply** to save the settings or **Cancel** to discard the changes.

Configuring DS-Lite

Dual-Stack Lite, or DS-Lite, allows ISPs to stop IPv4 addresses from reaching a customer's network devices and only use IPv6.

To view the DS-Lite settings, click **Internet**, then click **DS-Lite**.

DS-Lite Configuration

Select DS-Lite DHCPv6 Option or Manual Configuration

AFTR IPv6 Address

Enter the AFTR IPv6 connection type

B4 IPv4 Address

Enter an Optional B4 IPv4 address.

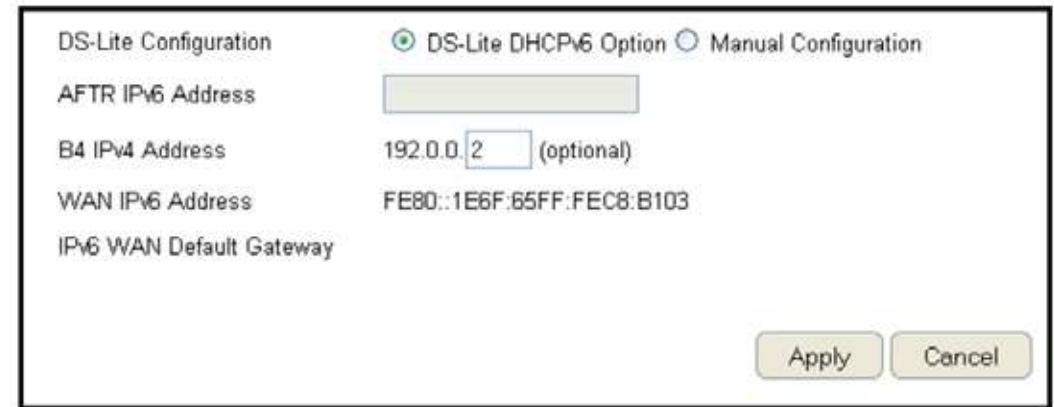
WAN IPv6 Address

Enter the WAN IPv6 address.

IPv6 WAN Default Gateway

Enter the IPv6 WAN default gateway address.

Click **Apply** to save the settings or **Cancel** to discard the changes.



The screenshot shows a configuration window titled "DS-Lite Configuration". At the top, there are two radio buttons: "DS-Lite DHCPv6 Option" (which is selected) and "Manual Configuration". Below this, there are five fields:

- "AFTR IPv6 Address": An empty text box.
- "B4 IPv4 Address": A text box containing "192.0.0.2" with "(optional)" to its right.
- "WAN IPv6 Address": A text box containing "FE80::1E6F:65FF:FEC8:B103".
- "IPv6 WAN Default Gateway": An empty text box.

At the bottom right of the window, there are two buttons: "Apply" and "Cancel".

Wireless LAN Setup

To view the Wireless Basic settings, click **Wireless** then select **Basic**.

Radio

Enable or disable the wireless radio. If the wireless radio is disabled, wireless access points are not available.

Mode

Select the wireless operating mode for the router. Two modes are available: Access Point or Wireless Distribution System (WDS) mode.

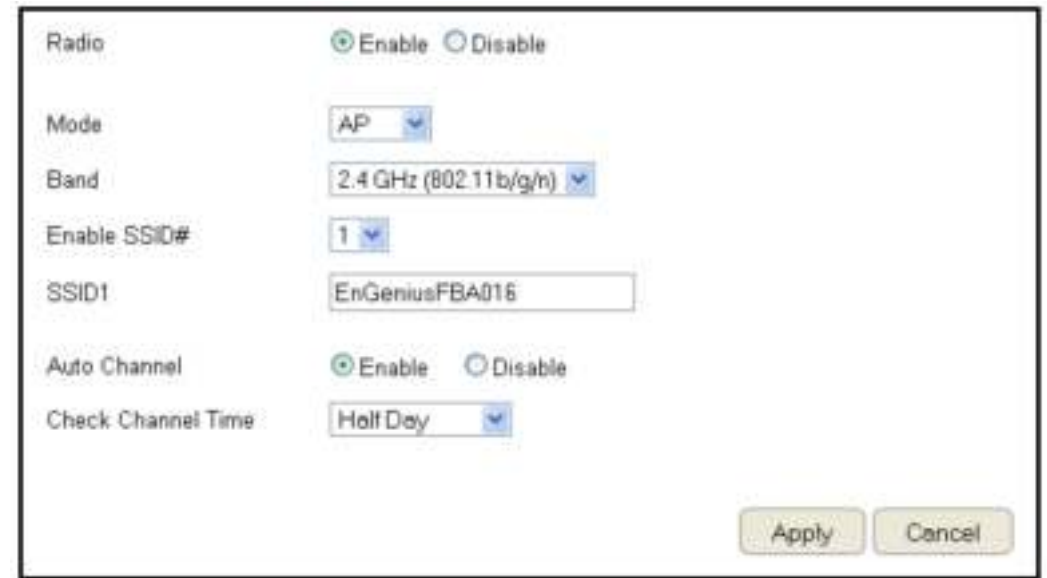
AP (Access Point)

Provides a connection access point for wireless devices.

WDS (Wireless Distribution System)

Allows the wireless network to be expanded using multiple access points without wired connections.

Click **Apply** to save the settings or **Cancel** to discard changes.



The image shows a configuration window for Wireless LAN Setup. It contains the following settings:

- Radio: Enable Disable
- Mode: AP (dropdown menu)
- Band: 2.4 GHz (802.11b/g/n) (dropdown menu)
- Enable SSID#: 1 (dropdown menu)
- SSID1: EnGeniusFBA016 (text input field)
- Auto Channel: Enable Disable
- Check Channel Time: Half Day (dropdown menu)

At the bottom right, there are two buttons: **Apply** and **Cancel**.

Access Point Mode

These instructions apply to both the 2.4 GHz and 5 GHz frequency bands.

The router by default is already configured in Access Point Mode. For optimum connectivity to a number of different wireless client devices, it's recommended that you keep the router in its default wireless settings. You can choose to have the router associate only with certain iterations (IEEE standards) and by doing so this will either positively or negatively affect the router's speed and throughput performance.

Band

Select a wireless standard for the network from the following options:

- 2.4 GHz (IEEE 802.11b)
- 2.4 GHz (IEEE 802.11n)
- 2.4 GHz (IEEE 802.11b/g)
- 2.4 GHz (IEEE 802.11g)
- 2.4 GHz (IEEE 802.11b/g/n)

- 5 GHz (IEEE 802.11a)
- 5 GHz (IEEE 802.11n)
- 5 GHz (IEEE 802.11a/n)

Enable SSID#

Select the number of wireless groups, between one and four, available on the network.

SSID[#]

Enter the name of the wireless network(s).

Auto Channel

Enable or disable having the router automatically select a channel for the wireless network. Auto Channel is enabled by default. Select disable to manually assign a specific channel. (Default = Disable)

Check Channel Time

When Auto Channel is enabled, select a time period that the system checks the appropriate channel for the router.

Channel

When Auto Channel is disabled, select a channel to assign to the wireless network. Valid values are from one to eleven in the US and one to thirteen in the EU.

Wireless Distribution System Mode

Configuring the router's wireless settings for WDS (Wireless Distribution System) mode.

Channel

Select a channel to assign to the wireless network. Valid values are from one to eleven in the US and one to thirteen in the EU.

MAC Address [#]

Enter the MAC address(es) for the wireless access point(s) that are part of the WDS.

WDS Data Rate

Select the data rate for the WDS.

Set Security

Click Set Security to set up the WDS security settings screen.

Channel	<input type="text" value="11"/>
MAC Address 1	<input type="text" value="000000000000"/>
MAC Address 2	<input type="text" value="000000000000"/>
MAC Address 3	<input type="text" value="000000000000"/>
MAC Address 4	<input type="text" value="000000000000"/>
WDS Data Rate	<input type="text" value="300M"/>
Set Security	<input type="button" value="Set Security"/>

WDS Security Settings Screen

Selecting the type of WDS encryption (Disable, WEP or WPA Pre-Shared Key) for the wireless network.

Wired Equivalent Privacy (WEP)

Key Length

Select between 64-bit and 128-encryption.

Key Format

Select the type of characters used for the WEP Key: ASCII (5 characters) or Hexadecimal (10 characters).

Default Key

Select the default encryption key for wireless transactions.

Encryption Key [#]

Enter the encryption key(s) used to encrypt the data packets during data transmission.

The screenshot shows the WDS Security Settings screen for WEP encryption. The settings are as follows:

- Encryption: WEP (selected)
- Authentication Type: Open System, Shared Key, Auto
- Key Length: 64-bit (selected)
- Key Type: ASCII (5 characters) (selected)
- Default key: Key 1 (selected)
- Encryption Key 1: [Redacted]
- Encryption Key 2: [Redacted]
- Encryption Key 3: [Redacted]
- Encryption Key 4: [Redacted]

Chapter 5

Wireless Encryption

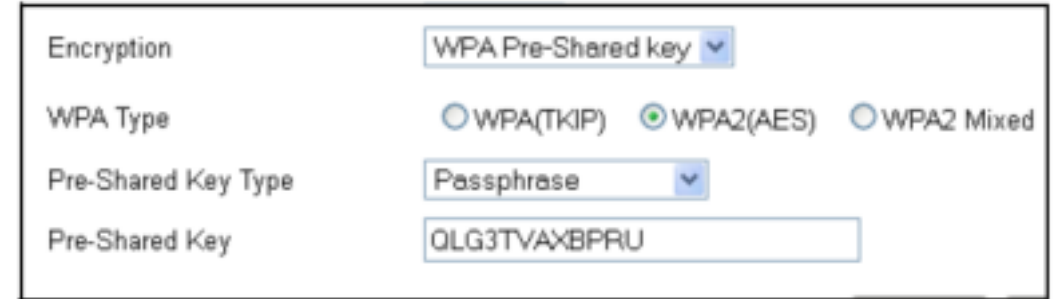


Wi-Fi Protected Access (WPA) Pre-Shared Key

WPA Type

Select the type of WPA.

- WPA Temporal Key Integrity Protocol (TKIP): Generates a 128-bit key for each packet.
- WPA2 Advanced Encryption Standard (AES): Government standard packet encryption which is stronger than TKIP.



The image shows a configuration window for WPA settings. It contains four rows of controls:

- Encryption:** A dropdown menu with "WPA Pre-Shared key" selected.
- WPA Type:** Three radio buttons: "WPA(TKIP)" (unselected), "WPA2(AES)" (selected), and "WPA2 Mixed" (unselected).
- Pre-Shared Key Type:** A dropdown menu with "Passphrase" selected.
- Pre-Shared Key:** A text input field containing the value "QLG3TVAXBPRU".

Pre-Shared Key Type

Select the type of pre-shared key as Passphrase (ASCII) or Hexadecimal.

Pre-Shared Key

Enter the pre-shared Key value.

Configuring Security

Enabling security options on the wireless network to prevent intrusions to systems on the wireless network.

To view the Security settings, click **Wireless** then select **Security**.

SSID Selection

Select the wireless network group in which you wish to change its wireless security settings.

Broadcast SSID

Enable or disable broadcast SSID. Choose whether or not the wireless group is visible to other members.

Wi-Fi Multimedia (WMM)

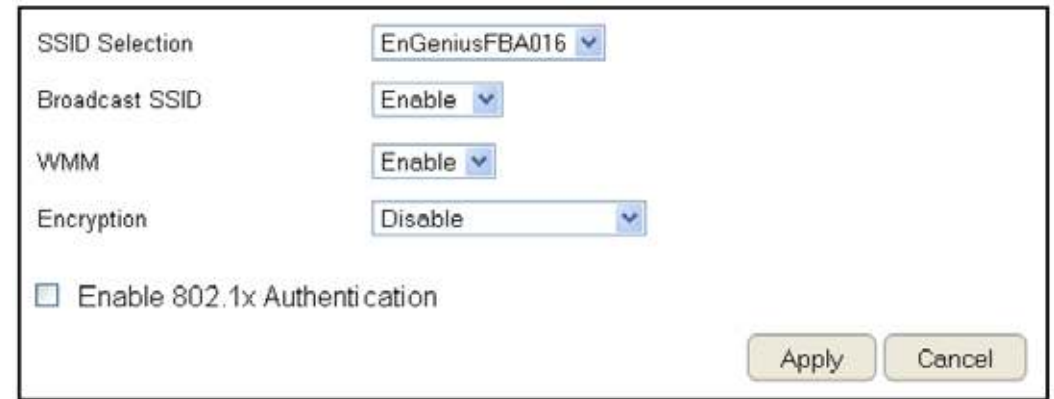
Enable or disable quality of service (QoS) to optimize the streaming for bandwidth sensitive data such as HDTV video streaming, online gaming, VoIP, videoconferencing, and etc.

Encryption

Select the encryption type for the router.

Enable 802.1x Authentication

Enable or disable 802.1x authentication.



The screenshot shows a configuration window for wireless security settings. It contains the following elements:

- SSID Selection:** A dropdown menu with the value "EnGeniusFBA016".
- Broadcast SSID:** A dropdown menu with the value "Enable".
- WMM:** A dropdown menu with the value "Enable".
- Encryption:** A dropdown menu with the value "Disable".
- Enable 802.1x Authentication:** An unchecked checkbox.
- Buttons:** "Apply" and "Cancel" buttons located at the bottom right.

Encryption Type

Enabling encryption is strongly encouraged because unauthorized parties within range of your router's wireless signal may attempt to access your wireless network and then gain access to private information on devices on your network. It's highly recommended that you encrypt your router with WPA2 (AES) for optimal security and throughput performance. Always select a strong passphrase greater than 8 characters long and comprised of letters, numbers, and symbols. Please make note of the passphrase and keep it in a secure location somewhere in your home in case you need to retrieve it.



IMPORTANT! WPA2 (AES) offers much stronger security than WEP (Wired Equivalent Privacy) which has been and can be compromised.

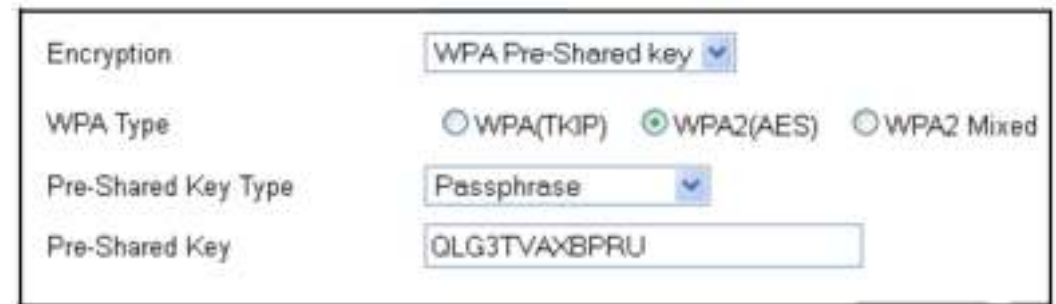
Click **Apply** to save the settings or **Cancel** to discard the changes.

Wi-Fi Protected Access (WPA) Pre-Shared Key

WPA Type

Select the type of WPA from the following:

- **WPA2 Advanced Encryption Standard (AES):**
RECOMMENDED – Government standard packet encryption which is stronger than TKIP.
- **WPA Temporal Key Integrity Protocol (TKIP):** Generates a 128-bit key for each packet.
- **WPA2 Mixed:** Mixed mode allows client devices to first associate to the router using WPA2, and if they fail to connect, then they are connected via WPA (TKIP).



The screenshot shows a configuration interface for WPA settings. It includes a dropdown menu for 'Encryption' set to 'WPA Pre-Shared key', radio buttons for 'WPA Type' with 'WPA2(AES)' selected, a dropdown for 'Pre-Shared Key Type' set to 'Passphrase', and a text input field for 'Pre-Shared Key' containing the value 'QLG3TVAXBPRU'.

Pre-Shared Key Type

Select the type of pre-shared key as Passphrase (ASCII) or Hexadecimal.

Pre-Shared Key

Enter the Pre-sShared Key value.

WPA RADIUS

Using a RADIUS server to authenticate wireless stations and provide a session key to encrypt data during communications.

WPA Type

Select the type of **Wireless Protected Access (WPA)** from the following:

- **WPA2 Advanced Encryption Standard (AES):**
RECOMMENDED – Government standard packet encryption which is stronger than TKIP.
- **WPA Temporal Key Integrity Protocol (TKIP):** Generates a 128-bit key for each packet.
- **WPA2 Mixed:** Mixed mode allows client devices to first associate to the router using WPA2, and if they fail to connect, then they are connected via WPA (TKIP).

RADIUS Server IP Address

Enter the IP address of the server.

RADIUS Server Port

Enter the port number of the server.

RADIUS Server Password

Enter the password of the server.

WPA Type	<input type="radio"/> WPA(TKIP) <input checked="" type="radio"/> WPA2(AES) <input type="radio"/> WPA2 Mixed
RADIUS Server IP Address	<input type="text"/>
RADIUS Server port	<input type="text" value="1812"/>
RADIUS Server password	<input type="text"/>

Wired Equivalent Privacy (WEP)

Authentication Type

Select the type of authentication from the following:

- **Open System:** Wireless stations can associate with the router without WEP encryption
- **Shared Key:** Devices must provide the corresponding WEP key(s) when connecting to the router
- **Auto:** The router automatically detects whether Open System or Shared Key is being used

Key Length

Select between 64-bit and 128-encryption.

Key Type

Select the type of characters used for the WEP Key: ASCII (5 characters) or Hexadecimal (10 characters).

Encryption Key [#]

Enter the encryption key(s) used to encrypt the data packets during data transmission.

Enable 802.1x Authentication

Enable or disable 802.1x authentication.

Authentication Type	<input checked="" type="radio"/> Open System <input type="radio"/> Shared Key <input type="radio"/> Auto
Key Length	64-bit <input type="button" value="v"/>
Key Type	ASCII (5 characters) <input type="button" value="v"/>
Default key	Key 1 <input type="button" value="v"/>
Encryption Key 1	XXXXXXXXXX
Encryption Key 2	XXXXXXXXXX
Encryption Key 3	XXXXXXXXXX
Encryption Key 4	XXXXXXXXXX
<input checked="" type="checkbox"/> Enable 802.1x Authentication	

Configuring Filters



WARNING! Incorrectly changing these settings may cause the device to stop functioning. Do not modify the settings in this section without a thorough understanding of the parameters.

When *Enable Wireless Access Control* is selected, only wireless clients with MAC addresses listed in the table are allowed to connect to the wireless network.

To view the Filter settings, click **Wireless** then select **Filter**.

Enabling Wireless Access Control

Select “Enable Wireless Access Control”

Description

Enter a description of the device allowed to connect to the network.

MAC Address

Enter the MAC Address of the wireless device.

Click **Add** to append a new device to the list or **Reset** to discard changes.

Enable Wireless Access Control

Description	MAC Address
<input type="text"/>	<input type="text"/>

MAC Address Filtering Table

No.	Description	MAC Address	Select
<input type="button" value="Delete Selected"/>	<input type="button" value="Delete All"/>	<input type="button" value="Reset"/>	

MAC Address Filtering Table

No. (Number)

The sequence number of the device.

Description

The description of the device.

MAC Address

The MAC address of the device.

Select

Indicates the device(s) that can have actions performed on them.

Click **Delete Selected** to remove selected devices from the list.

Click **Delete All** to remove all devices from the list.

Click **Reset** to discard changes. Click **Apply** to save the settings or **Cancel** to discard changes.

No.	Description	MAC Address	Select
1	notebook	00:02:81:11:D8:D7C3	<input checked="" type="checkbox"/>
2	game console	00:02:8F:FD:8D:06	<input checked="" type="checkbox"/>
3	tablet	00:02:81:11:D8:D7C3	<input checked="" type="checkbox"/>

Buttons: Delete Selected, Delete All, Reset, Apply, Cancel

Configuring Wi-Fi Protected Setup

Wi-Fi Protected Setup (WPS) is a quick and easy way to associate a new wireless client device to the encrypted router using a PIN or the WPS buttons on each device.

To view the WPS settings, click **Wireless** then select **WPS**.

WPS

Enable or disable WPS.

WPS Current Status

Displays whether or not the wireless security is configured.

Self Pin Code

An 8-digit PIN which is required when configuring the router for the first time in Windows 7 or Vista.

SSID

The name of the wireless network.

Authentication Mode

The current security settings for the corresponding SSID (wireless network).

Passphrase Key

A randomly generated key created by the router during the WPS process.

WPS	<input checked="" type="checkbox"/> Enable
Wi-Fi Protected Setup Information	
WPS Current Status	unConfigured
Self Pin Code	64905181
SSID	EnGeniusFBA016
Authentication Mode	WPA2 Pre-Shared key
Passphrase Key	<input type="text"/>
WPS Via Push Button	<input type="button" value="Start to Process"/>
WPS via PIN	<input type="text"/> <input type="button" value="Start to Process"/>

WPS via Push Button

Click **"Start to Process"** to activate WPS.

WPS via PIN

Enter the PIN of a wireless device click **"Start to Process"** to activate WPS.

Configuring Client List

View the wireless devices currently connected to the router.

To view the Client List settings, click *Wireless* then select Client List.

Interface

The type of network connected to the device.

MAC Address

The MAC address of device connected to network.

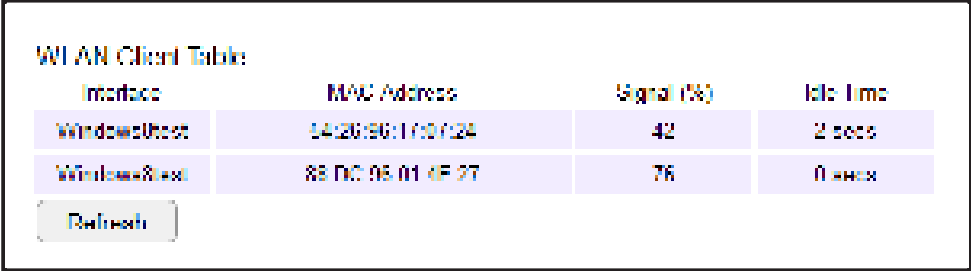
Signal

The signal strength of the device connected to the network.

Idle Time

The amount of time the connected device has not been active on the network.

Click **Refresh** to refill the list with currently connected devices.



Interface	MAC Address	Signal (%)	Idle Time
WindowsHost	64:2B:196:17:09:024	42	2 secs
Windows8xxx	88:DC:05:01:4E:97	76	0 secs

Chapter 6

Advanced Settings



Configuring Advanced Settings

Allows you to define the Advanced Settings available on the router.



WARNING! Incorrectly changing these settings may cause the device to stop functioning. Do not modify the settings in this section without a thorough understanding of the parameters.

To view the Advanced settings, click **Wireless** then select **Advanced**.

Fragment Threshold

Enter the maximum size of a packet during data transmission. A value too low could lead to low performance.

RTS Threshold

Enter the RTS threshold. If the packet size is smaller than the RTS threshold, the router does not use RTS/CTS to send the data packet.

Beacon Interval

Enter the beacon interval. This is the amount of time that the router sets to synchronize the network.

Delivery Traffic Indication Message (DTIM) Period

Enter the DTIM period. The DTIM is a countdown period informing clients of the next point of broadcast and multicast of messages over the network. Valid values are between 1 and 255.

N Data Rate

Select the N data rate. This is the rate in which the ESR Series Router will transmit data packets to wireless N compatible devices.

Fragment Threshold	<input type="text" value="2346"/>	(256-2346)
RTS Threshold	<input type="text" value="2347"/>	(1-2347)
Beacon Interval	<input type="text" value="100"/>	(20-1000 ms)
DTIM Period	<input type="text" value="1"/>	(1-255)
Data Rate	<input type="button" value="Auto"/>	
N Data Rate	<input type="button" value="Auto"/>	
Channel Bandwidth	<input checked="" type="radio"/> Auto 20/40 MHZ	<input type="radio"/> 20 MHZ
Preamble Type	<input checked="" type="radio"/> Long Preamble	<input type="radio"/> Short Preamble
CTS Protection	<input checked="" type="radio"/> Auto	<input type="radio"/> Always <input type="radio"/> None
Tx Power	<input type="button" value="100 %"/>	
		<input type="button" value="Apply"/> <input type="button" value="Cancel"/>

Channel Bandwidth

Select the channel bandwidth. The factory default is Auto 20/40MHz. The default setting provides the best performance by auto selecting channel bandwidth.

Preamble Type

Select the preamble type. Long Preamble provides better LAN compatibility and Short Preamble provides better wireless performance.

CTS Protection

Select the type of CTS protection. Using CTS Protection can lower the data collisions between Wireless B (802.11b) and Wireless G (802.11g) devices and lower data throughput.

Tx Power

Select the wireless signal strength level. Valid values are between 25% and 100%.

Click **Apply** to save the settings or **Cancel** to discard changes.

Setting Up Parental Controls

Offensive web content can be blocked when a parent specifies keywords. Parents can also limit Internet access within a specified time and day, with a **Schedule**. A **Policy** is a rule profile which describes the keyword filter and Internet access schedule. Parents can apply the policy to multiple users or **Policy Members**. The Parental Controls tool will screen policy members based on applied policies.

Configuring the Access Control List

To view the ACL settings, click **Firewall** then select **ACL**.



Note: By default, everyone is allowed to view all the contents without any limitation and filter.

Viewing the Access Control List

To learn how to view existing access control list, refer to **Viewing Parental Policies**.

Adding a Control Policy

To learn how to create and add a policy to the access control list, refer to **Adding a Control Policy**.

To view the **Wizard settings**, click **Parental Control** then select **Wizard**.

Enable Parental Control (Access Control)

Click to enable Parental Control.

Add Policy

Click the button to add a new control policy to the network.

Policy Table

Shows the control policies available on the network.

Click **Apply** to save changes or **Cancel** to discard them.

Enable	Policy Name	Target Device	Schedule	Logged	Modify
<input checked="" type="checkbox"/>	Web Monitor	---	Always	Yes	
<input checked="" type="checkbox"/>	weekday		From 12:00 To 22:00--Mon, Tue, Wed, Thu, Fri	Yes	
<input checked="" type="checkbox"/>	weekend		From 06:00 To 22:00--Sat, Sun	Yes	
<input checked="" type="checkbox"/>	New_Policy	---	Always	Yes	

Adding a Control Policy

The router provides a wizard to guide you through setting up a new Access Control Policy.

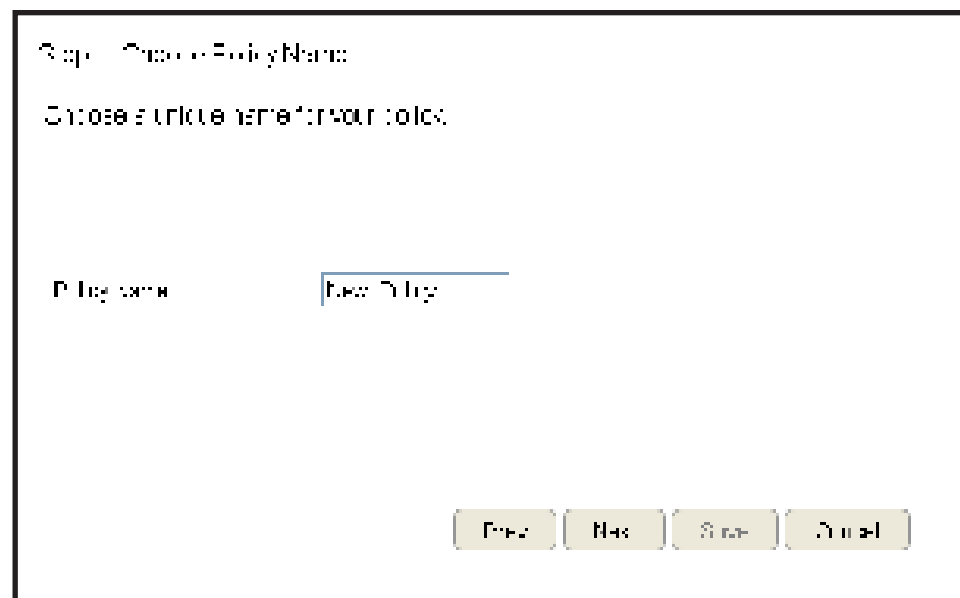
To start the procedure, click the **Add Policy** button.



Click **Next** to continue the procedure or **Cancel** to stop the procedure.

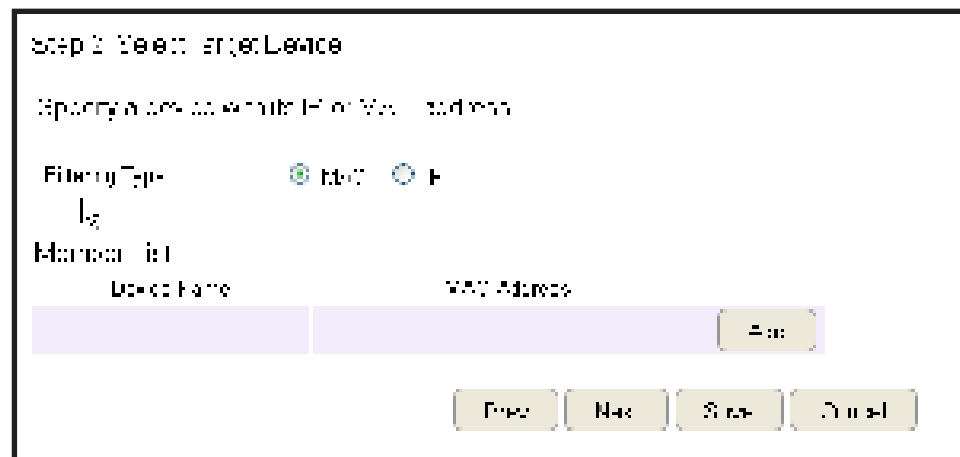
The procedure consists of the following steps:

1. Enter a unique name for your policy in the Policy Name text field.



2. Click **Prev** to return to the previous screen, **Next** to continue the procedure, or **Cancel** to stop the procedure.


3. Add target devices to the access control policy.



To add a device to the Member List, follow these steps:

- Click **MAC** or **IP** from the **Filter Type** option.
- Click **Add** to show the add client dialog.
- Enter the name of the device in the **Device Name** text field.

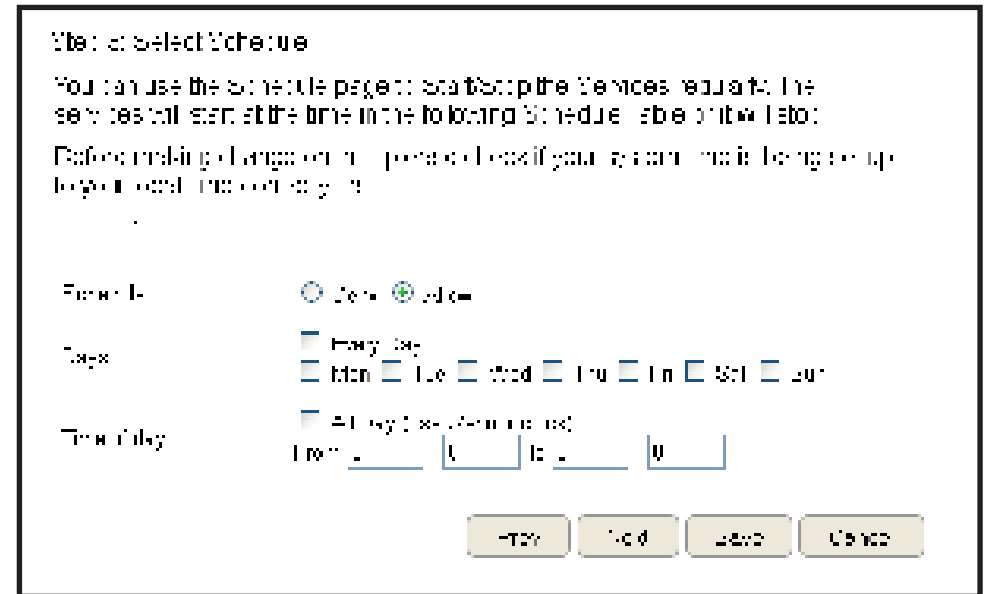


- Enter either a MAC address or an IP address in the **Address** field depending upon which filter type you chose.
- Click the **Add Device Button**  to close the screen and add the device to the Member List.



- Click **Prev** to return to the previous screen, **Next** to continue the procedure, **Save** to save the changes, or **Cancel** to stop the procedure.

- Setting up a schedule for the router services.



To set up a **Service Schedule**, follow these steps:

- Select **Allow** from the **Schedule** option.
- Click the days that the schedule will be active.
- Enter the time period that the schedule will be active.

- Click **Prev** to return to the previous screen, **Next** to continue the procedure, **Save** to save the changes, or **Cancel** to stop the procedure.

7. Setup a keyword and URL filter list.

Step 4: Web/Keyword Filter

You can block access to certain Web sites for a particular PC by entering either a full URL address or just a keyword of the Web site

The screenshot shows the 'Step 4: Web/Keyword Filter' configuration screen. At the top, it says 'Step 4: Web/Keyword Filter' and 'You can block access to certain Web sites for a particular PC by entering either a full URL address or just a keyword of the Web site'. Below this, there is a 'Filtering' section with two radio buttons: 'Deny' (unselected) and 'Allow' (selected). To the right of the radio buttons is an 'Add' button. Below the radio buttons is a text input field labeled 'URL/Keyword' and another 'Add' button. Underneath is a table with two columns: 'No.' and 'URL/Keyword'. At the bottom left, there is a checkbox labeled 'Enable Application Filter'. At the bottom right, there are four buttons: 'Prev', 'Next', 'Save', and 'Cancel'.

To set up a keyword/URL filter list, follow these steps:

- Select **Allow** from the Filtering option.
- Enter a keyword or URL in the **URL/Keyword text field**.
- Click the **Add** button to add the filter to the list.
- Repeat steps **a through c** for each filter.

8. Click **Enable Application Filter** to filter software applications.

9. Click **Prev** to return to the previous screen, **Next** to continue the procedure, **Save** to save the changes, or **Cancel** to stop the procedure.

10. Select **Enable** to save web access information to a log file or **Disable** to ignore the information.

The screenshot shows the 'Step 6: Configure Web Access Logging' configuration screen. At the top, it says 'Step 6: Configure Web Access Logging'. Below this, there is a 'Web Access Logging' section with two radio buttons: 'Disabled' (selected) and 'Enabled' (unselected). At the bottom right, there are four buttons: 'Prev', 'Next', 'Save', and 'Cancel'.

11. Click **Prev** to return to the previous screen, **Save** to save the changes, or **Cancel** to stop the procedure.

Viewing Parental Policies

Available parental control policies are shown in a table and each policy can be enabled or disabled, edited, and deleted.

To view the Web settings, click **Parental Control** then select **Web Monitor**.

Enable

Click to enable or disable the control policy.

Policy Name

Shows the control policy name.

Target Device

Shows the target device MAC address or IP address.

Schedule

Shows the control policy schedule.

Logged

Shows whether the control policy is storing log information.

Modify

Edit a policy by clicking the **Edit Button**.











Delete a policy by clicking the **Delete Button**.



Enable Parental Control (Access Control)

Policy Table

Enable	Policy Name	Target Device	Schedule	Logged	Modify
<input checked="" type="checkbox"/>	Web Monitor	---	Always	Yes	 
<input checked="" type="checkbox"/>	weekday		From 12:00 To 22:00---Mon, Tue, Wed, Thu, Fri	Yes	 
<input checked="" type="checkbox"/>	weekend		From 06:00 To 22:00---Sat, Sun	Yes	 
<input checked="" type="checkbox"/>	New_Policy	---	Always	Yes	 

Guest Network

The Guest Network function enables you to offer Internet connectivity to visitors or guests while keeping other networked devices (computers and hard drives) and sensitive personal or company information private and secure.

The Guest Network is controlled by the Wireless SSID function. When the Guest Network function is enabled, the Guest SSID can only get the internet connection from WAN, but can not reach the client from the LAN port.

Enabling the Guest Network

To view the Selection settings, click **Guest Network** then select **Selection**.

Guest Network

Enable or Disable the Guest Network function

Client Isolation

Guest clients are isolated and cannot communicate with each other.

SSID

Choose a SSID for the Guest Network used. The SSID can be defined from the Wireless setting page.

The screenshot shows a configuration window with two sections: "Wireless 2.4GHz" and "Wireless 5GHz". Each section has a "Guest Network" dropdown menu and an "SSID" dropdown menu. In the 2.4GHz section, "Guest Network" is set to "Disabled" and "SSID" is "esr600". In the 5GHz section, "Guest Network" is set to "Disabled" and "SSID" is "EnGeniusFD8C6B". At the bottom right of the window are "Apply" and "Cancel" buttons.

Band	Guest Network	SSID
Wireless 2.4GHz	Disabled	esr600
Wireless 5GHz	Disabled	EnGeniusFD8C6B

Click **Apply** to save the settings or **Cancel** to discard changes.

Configuring the DHCP Server Setting

The Guest Network SSID should be on a different subnet from the router's DHCP server.

To view the DHCP Server Settings, click **Guest Network** then select **DHCP Server Setting**.

Router IP address

Define the router IP address for the Guest network.

Default Subnet Mask

Define the Subnet Mask IP address for the Guest network.

Start IP

To define the Guest network DHCP server start IP.

End IP

To define the Guest network DHCP server end IP.

Click **Apply** to save the settings or **Cancel** to discard changes.

Router IP Address	<input type="text" value="192.168.169.1"/>
Default Subnet Mask	<input type="text" value="255.255.255.0"/>
Start IP	<input type="text" value="192.168.169.100"/>
End IP	<input type="text" value="192.168.169.200"/>

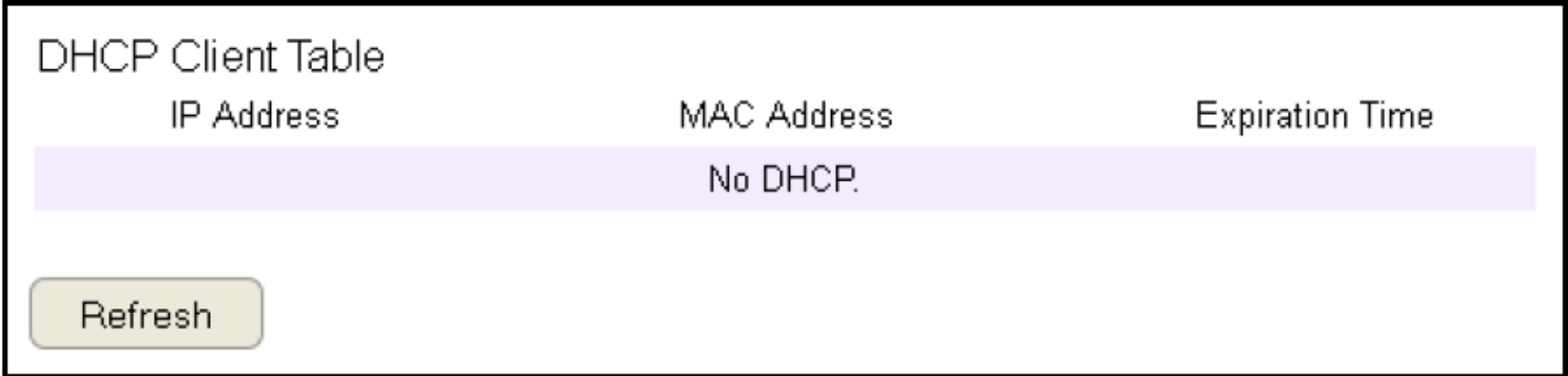
Viewing the DHCP Client List on the Guest Network

Shows the list of guest clients registered on the network.

To view the DHCP Client List settings, click **Guest Network** then select **DHCP Client List**.

DHCP Client Table

Shows the IP address, MAC address, and expiration time of each of the registered clients on the list.



DHCP Client Table	IP Address	MAC Address	Expiration Time
No DHCP.			

Refresh

IP Address

The IP address of the guest client.

MAC Address

The MAC address of the guest client.

Expiration Time

The time that the guest client's DHCP address will expire and must be renewed.

Click **Refresh** to refresh the view of the list.

IPv6

There are several connection types to choose from: Auto Detection, Static IPv6, Autoconfiguration (SLAAC/DHCPv6), PPPoE, IPv6 in IPv4 Tunnel, 6to4, and Link-local. If you are unsure of your connection method, please contact your IPv6 Internet Service Provider.



Note: If you are using the PPPoE option, you will need to ensure that any PPPoE client software on your computers has been removed or disabled.

Enabling IPv6 Settings

To view the Basic settings, click IPv6 then select Basic.

Before using or configuring the IPv6 protocol, or IPv6 passthrough, on an ESR Series Router you must enable it.

IPv6

Select enable to configure the IPv6 protocol on the router.

IPv6 Passthrough

Select enable to allow IPv6 passthrough functionality.

IPv6 must be disabled to enable this feature.

Click **Apply** to save the settings or **Cancel** to discard changes.

The screenshot shows a configuration window with two rows of settings. The first row is labeled 'IPv6' and has two radio buttons: 'Enable' (which is selected) and 'Disable'. The second row is labeled 'IPv6 Pass-Through' and has two radio buttons: 'Enable' and 'Disable' (which is selected). At the bottom right of the window are two buttons: 'Apply' and 'Cancel'.

Viewing the IPv6 Connection Status

To view the Status information, click IPv6 then select Status.

IPv6 Connection Information

Shows the IPv6 connection type, the LAN IPv6 link-local address and the DHCP-PD.

LAN IPv6 Computers List

Shows a list of network computers and their IPv6 connection information.

IPv6 Connection Information

IPv6 Connection Type	Link-local only
LAN IPv6 Link-Local Address	FE80::202:6FFF:FEFB:A016
DHCP-PD	Disabled

LAN IPv6 Computers

Name (if any)	MAC	IPv6 Address
---------------	-----	--------------

Configuring Static IPv6

To view the Static IPv6 settings, click **IPv6** then select **Static IPv6**.

Use Link-Local Address

Enable or disable LAN link-local address.

IPv6 Address

Enter the LAN (local) IPv6 address for the router.

Subnet Prefix Length

Enter the subnet prefix length.

Default Gateway

Enter the default gateway.

Primary IPv6 DNS Address

Enter the primary IPv6 DNS address.

Secondary IPv6 DNS Address

Enter the secondary IPv6 DNS address.

LAN IPv6 Address

Enter the LAN IPv6 address.

LAN IPv6 Link-Local Address

Enter the LAN IPv6 link-local address.

Enable Automatic IPv6 Address Assignment

Enable or disable automatic IPv6 address assignment.

Autoconfiguration Type

Enter the autoconfiguration type. (Default: SLAAC+RDNSS).

Use Link-Local Address	<input checked="" type="checkbox"/>
IPv6 Address	<input type="text" value="FE80::1E6F:65FF:FEC8:B103"/>
Subnet Prefix Length	<input type="text" value="64"/>
Primary IPv6 DNS Address	<input type="text"/>
Secondary IPv6 DNS Address	<input type="text"/>
LAN IPv6 Address	<input type="text"/> /64
LAN IPv6 Link-Local Address	FE80::202:6FFF:FEFB:A016
Enable Automatic IPv6 Address Assignment	<input checked="" type="checkbox"/>
Autoconfiguration Type	<input type="text" value="SLAAC + RDNSS"/>
Router Advertisement Lifetime	<input type="text" value="1440"/> (minutes)

Router Advertisement Lifetime

Enter the IPv6 Address Lifetime (in minutes).

Click **Apply** to save the settings or **Cancel** to discard changes.

Setting Autoconfiguration

To view the Auto Configuration settings, click **IPv6** then select **Auto Configuration**.

Obtain A DNS Server Address Automatically

Enable or disable obtaining a DNS server automatically.

Primary IPv6 DNS Address

Enter the primary IPv6 DNS address.

Secondary IPv6 DNS Address

Enter the secondary IPv6 DNS address.

Enable DHCP-PD

Enable or disable DHCP-prefix delegation (PD).

LAN IPv6 Address

Enter the LAN IPv6 address.

LAN IPv6 Link-Local Address

Enter the LAN IPv6 link-local address.

Enable Automatic IPv6 Address Assignment

Enable or disable automatic IPv6 address assignment.

Autoconfiguration Type

Enter the autoconfiguration type. (Default: SLAAC+RDNSS)

Router Advertisement Lifetime

Enter the IPv6 Address Lifetime (in minutes).

Click **Apply** to save the settings or **Cancel** to discard changes.

The screenshot shows a configuration window for IPv6 settings. It includes the following fields and controls:

- Obtain A DNS Server Address Automatically:** Radio buttons for **Enable** (selected) and **Disable**.
- Primary IPv6 DNS Address:** An empty text input field.
- Secondary IPv6 DNS Address:** An empty text input field.
- Enable DHCP-PD:** A checked checkbox.
- LAN IPv6 Address:** A text input field with a **/64** suffix.
- LAN IPv6 Link-Local Address:** A text field containing the value **FE80::202:6FFF:FEFB:A016**.
- Enable Automatic IPv6 Address Assignment:** A checked checkbox.
- Autoconfiguration Type:** A dropdown menu currently showing **SLAAC + RDNSS**.
- Router Advertisement Lifetime:** A text input field containing **1440**, followed by the text **(minutes)**.

At the bottom right of the dialog are two buttons: **Apply** and **Cancel**.

Configuring PPPoE

To view the PPPoE settings, click **IPv6** then select **PPPoE**.

Address Mode

Select Static if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select Dynamic.

IP Address

Enter the IP address (Static PPPoE only).

User Name

Enter your PPPoE user name.

Password

Enter your PPPoE password.

Verify Password

Retype the your PPPoE password.

Service Name

Enter the ISP Service Name (optional).

Reconnect Mode

Select either Always-on, On-Demand, or Manual.

Maximum Idle Time

Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU

Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Address Mode	<input checked="" type="radio"/> Dynamic IP <input type="radio"/> Static IP
IP Address	<input type="text"/>
User Name	<input type="text"/>
Password	<input type="text"/>
Verify Password	<input type="text"/>
Service Name	<input type="text"/> (optional)
Reconnect Mode	<input checked="" type="radio"/> Always on <input type="radio"/> On demand <input type="radio"/> Manual
Maximum Idle Time	<input type="text" value="5"/> (minutes, 0,infinite)
MTU	<input type="text" value="1492"/> (bytes)

Obtain A DNS Server Address Automatically

Enable or disable obtaining a DNS server automatically.

Primary IPv6 DNS Address

Enter the primary IPv6 DNS address.

Secondary IPv6 DNS Address

Enter the secondary IPv6 DNS address.

Enable DHCP-PD

Enable or disable DHCP-prefix delegation (PD).

LAN IPv6 Address

Enter the LAN IPv6 address.

LAN IPv6 Link-Local Address

Enter the LAN IPv6 link-local address.

Enable Automatic IPv6 Address Assignment

Enable or disable automatic IPv6 address assignment.

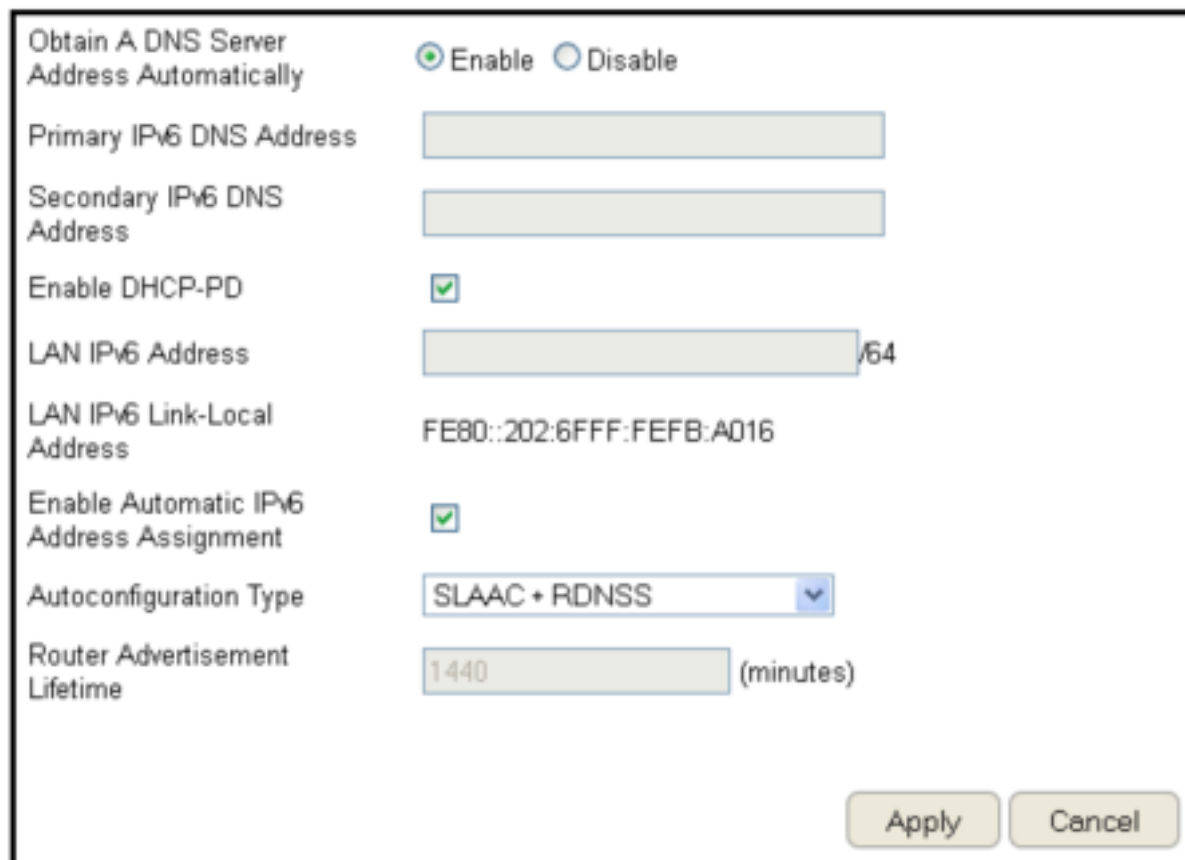
Autoconfiguration Type

Enter the autoconfiguration type. (Default: SLAAC+RDNSS)

Router Advertisement Lifetime

Enter the IPv6 Address Lifetime (in minutes).

Click **Apply** to save the settings or **Cancel** to discard changes.



The screenshot shows a configuration window for IPv6 settings. It includes the following fields and controls:

- Obtain A DNS Server Address Automatically:** Radio buttons for **Enable** (selected) and **Disable**.
- Primary IPv6 DNS Address:** An empty text input field.
- Secondary IPv6 DNS Address:** An empty text input field.
- Enable DHCP-PD:** A checked checkbox.
- LAN IPv6 Address:** A text input field with a **/64** suffix.
- LAN IPv6 Link-Local Address:** A text input field containing the value **FE80::202:6FFF:FEFB:A016**.
- Enable Automatic IPv6 Address Assignment:** A checked checkbox.
- Autoconfiguration Type:** A dropdown menu currently set to **SLAAC + RDNSS**.
- Router Advertisement Lifetime:** A text input field containing **1440** with the unit **(minutes)**.

At the bottom right of the window are two buttons: **Apply** and **Cancel**.

Configuring 6to4

To view the 6to4 settings, click **IPv6** then select **6to4**.

6to4 Address

Enter the 6to4 IP address.

Primary IPv6 DNS Address

Enter the primary IPv6 DNS address.

Secondary IPv6 DNS Address

Enter the secondary IPv6 DNS address.

LAN IPv6 Address

Enter the LAN IPv6 address.

LAN IPv6 Link-Local Address

Enter the LAN IPv6 link-local address.

Enable Automatic IPv6 Address Assignment

Enable or disable automatic IPv6 address assignment.

Autoconfiguration Type

Enter the autoconfiguration type. (Default: SLAAC+RDNSS)

Router Advertisement Lifetime

Enter the IPv6 Address Lifetime (in minutes).

Click **Apply** to save the settings or **Cancel** to discard changes.

6to4 Address	0:0:0:0:0:0:0
Primary IPv6 DNS Address	<input type="text"/>
Secondary IPv6 DNS Address	<input type="text"/>
LAN IPv6 Address	2002:0:0:0001::1/64
LAN IPv6 Link-Local Address	FE80::202:6FFF:FEFB:A016
Enable Automatic IPv6 Address Assignment	<input checked="" type="checkbox"/>
Autoconfiguration Type	SLAAC + RDNSS <input type="button" value="v"/>
Router Advertisement Lifetime	<input type="text" value="1440"/> (minutes)

Viewing Local Connections

To view the Link Local settings, click **IPv6** then select **Link Local**.

LAN IPv6 Link-Local Address

Enter the LAN IPv6 link-local address.

Click **Apply** to save the settings or **Cancel** to discard changes.

LAN IPv6 Link-Local Address	FE80::202:6FFF:FEFB:A016
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

Firewall Setup



Note: This section applies to Client Router mode.

Configuring Basic Settings

To view the Basic settings, click Firewall then select Basic.

The ESR Series Router firewall automatically detects and blocks Denial of Service (DoS) attacks. URL blocking, packet filtering and stateful packet inspection (SPI) are also supported. The details of the attack and the timestamp are recorded in the security log.

Firewall

Enable or disable the firewall of the ESR Series Router.

Click **Apply** to save the settings or **Cancel** to discard changes.

Firewall Enable Disable

Apply

Configuring Advanced Settings

The router supports VPN pass-through which allows virtual private networking (VPN) packets to pass through the firewall. To view the Advanced settings, click Firewall then select Advanced.



Note: VPN L2TP Pass-through, VPN PPTP Pass-through, and VPN IPsec Pass-through are enabled by factory default.

VPN L2TP Pass-through

Click Select to allow an L2TP connection method over a VPN.

VPN PPTP Pass-through

Click Select to allow a PPTP connection method over a VPN.

VPN IPsec Pass-through

Click Select to allow an IPsec connection method over a VPN.

IPv6 Pass-through

Click Select to allow IPv6 packets to pass through the firewall.

PPPoE Pass-through

Click Select to allow a PPPoE packets to pass through the firewall.

Click **Apply** to save the settings or **Cancel** to discard changes.

Description	Select
VPN L2TP Pass-Through	<input checked="" type="checkbox"/>
VPN PPTP Pass-Through	<input checked="" type="checkbox"/>
VPN IPsec Pass-Through	<input checked="" type="checkbox"/>
PPPoE Pass-Through	<input type="checkbox"/>

VPN L2TP Pass-through Click **Select** to allow an L2TP connection method over a VPN.

VPN PPTP Pass-through Click **Select** to allow a PPTP connection method over a VPN.

VPN IPsec Pass-through Click **Select** to allow an IPsec connection method over a VPN.

IPv6 Pass-through Click **Select** to allow IPv6 packets to pass through the firewall.

PPPoE Pass-through Click **Select** to allow PPPoE packets to pass through the firewall.

Description	Select
VPN L2TP Pass-Through	<input checked="" type="checkbox"/>
VPN PPTP Pass-Through	<input checked="" type="checkbox"/>
VPN IPsec Pass-Through	<input checked="" type="checkbox"/>
IPv6 Pass-Through	<input checked="" type="checkbox"/>
PPPoE Pass-Through	<input type="checkbox"/>

Apply **Cancel**

Click **Apply** to save the settings or **Cancel** to discard changes.



Note: VPN L2TP Pass-through, VPN PPTP Pass-through, and VPN IPsec Pass-through are enabled by factory default.

Configuring Demilitarized Zone

Configuring a device on the LAN as a Demilitarized Zone (DMZ) host allows unrestricted two-way Internet access for Internet applications, such as online video games, to run from behind the NAT firewall. The DMZ function allows the router to redirect all packets going to the WAN port IP address to a particular IP address on the LAN. The difference between the virtual server and the DMZ function is that a virtual server redirects a particular service or Internet application, such as FTP, to a particular LAN client or server, whereas a DMZ redirects all packets, regardless of the service, going to the WAN IP address to a particular LAN client or server. A DMZ host allows a computer to have all its connections and ports completely open during data transmission.



WARNING! The PC defined as a DMZ host is not protected by the firewall and is vulnerable to malicious network attacks. Do not store or manage sensitive information on the DMZ host.

To view the DMZ settings, click **Firewall** then select **DMZ**.

Enabling DMZ

Click Enable DMZ to activate DMZ functionality.

Local IP Address

Enter an IP address of a device on the LAN.

Enable DMZ

Local IP Address < Please select a PC. ▾

Apply Cancel

Click **Apply** to save the settings or **Cancel** to discard changes.

Configuring Denial of Service

To enable blocking of denial of service (DoS) attacks, select the DoS option in the Firewall section. DoS attacks can flood the Internet connection with the continuous transmission of data. Blocking these attacks ensures that the Internet connection is always available.

To view the DoS settings, click **Firewall** then select **DoS**.

Block DoS

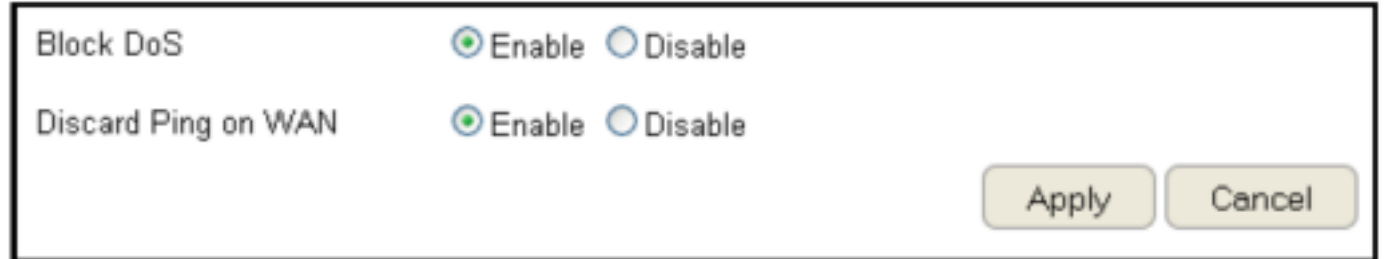
Enable or disable blocking DoS attacks.

Discard Ping on WAN

ICMP (ping) packages are blocked while Block DoS is enabled.

Enable Discard Ping on WAN if the WAN port is required.

Click **Apply** to save the settings or **Cancel** to discard changes.



The screenshot shows a configuration dialog box with two rows of settings. The first row is labeled 'Block DoS' and has two radio buttons: 'Enable' (which is selected) and 'Disable'. The second row is labeled 'Discard Ping on WAN' and also has two radio buttons: 'Enable' (selected) and 'Disable'. At the bottom right of the dialog box, there are two buttons: 'Apply' and 'Cancel'.

Virtual Private Network Setup

A Virtual Private Network (VPN) provides a secure connection between two remote locations or two users over the Internet. It provides authentication to securely encrypt data communicated between the two remote endpoints. The Short Model Name supports up to 5 VPN tunnels, making it ideal for small-office / home-office users or employees who work from home but need to communicate securely back to the main office.

Viewing Status

To view the Status settings, click **VPN** then select **Status**.

No. (Number)

The sequence number of the VPN tunnel.

Name

The name of the VPN tunnel.

Type

The type of VPN tunnel.

Gateway/Peer IP Address

The VPN gateway or peer IP address.

Transmit Packets

The number of packets transmitted.

Received Packets

The number of packets received.

Uptime

The amount of time the VPN has been active.

Select

Indicates the device(s) that can have actions performed on them.

No.	Name	Type	Gateway/Peer IP address	Transmit Packets	Received Packets	Uptime	Select
							<input type="button" value="Connect"/> <input type="button" value="Disconnect"/>

Configuring a VPN Tunnel Profile

To view the Status settings, click VPN then select Status.
Manually configure a VPN tunnel profile.

Creating a Profile

- Click **Add** to create a new VPN tunnel profile.
- Click **Edit** to edit the settings of the selected profile.
- Click **Delete Selected** to delete the selected profile.
- Click **Delete All** to delete all current profiles.

No.	Enable	Name	Type	Local Address	Remote Address	Crypto-suite	Gateway	Select
1	<input type="checkbox"/>	VPNtunnel	IPSec	192.168.0.0/24		ESP-3DES-SHA1	0.0.0.0	<input type="checkbox"/>

General

For manually configuring a VPN tunnel profile.

Name: Enter the name for this profile.

Connection Type: Click the drop-down menu to select the connection type (PPTP, L2TP, IPSec, L2TP over IPSec).

Authentication Type: Click the drop-down menu to select the authentication type.

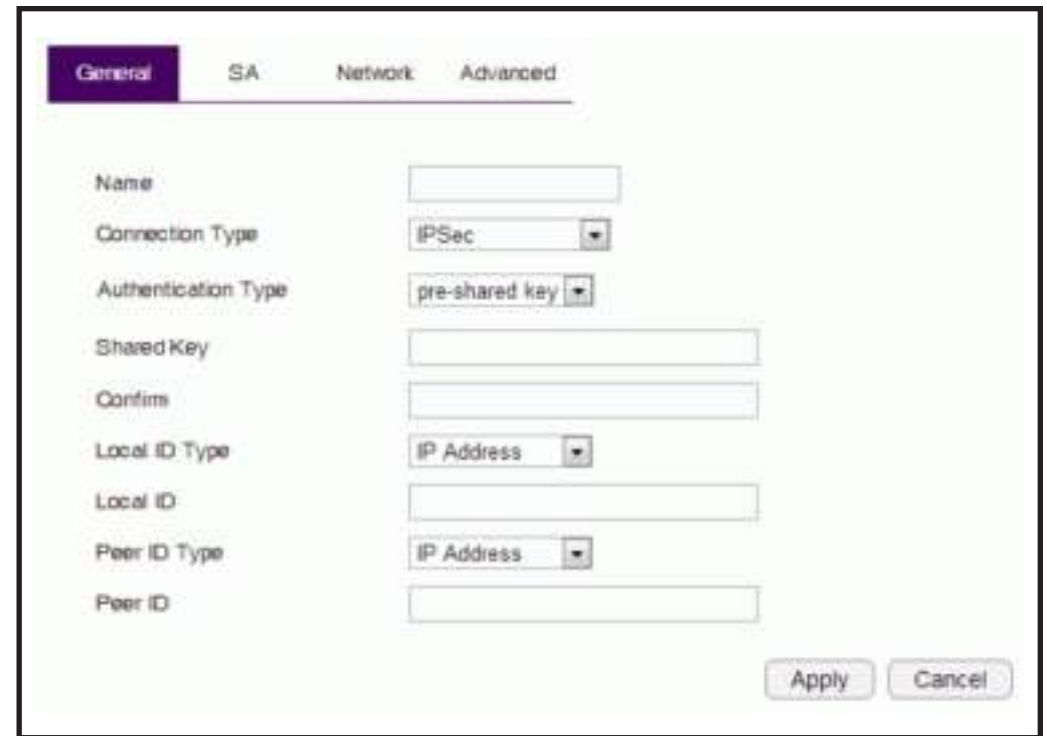
Shared Key: Enter the shared key to be used for this profile.

Confirm: Enter the shared key a second time to confirm the shared key.

Local ID Type: Click the drop-down menu to select the type of ID used for this profile (IP address, Domain Name, Email Address).

Local ID: Enter the local ID designation based on definition type from Local ID Type, previous field.

Peer ID type: Click the drop-down menu to select the type of Peer ID for this profile (IP address, Domain Name, Email Address).



The screenshot shows a configuration window with four tabs: General, SA, Network, and Advanced. The General tab is active. The fields are as follows:

Field	Value
Name	<input type="text"/>
Connection Type	IPSec
Authentication Type	pre-shared key
Shared Key	<input type="text"/>
Confirm	<input type="text"/>
Local ID Type	IP Address
Local ID	<input type="text"/>
Peer ID Type	IP Address
Peer ID	<input type="text"/>

Buttons: Apply, Cancel

Peer ID: Enter the Peer ID designation based on definition type from Peer ID Type, previous field.

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

Cancel: Click **Cancel** to delete the changes.

SA (Security Association)

IKE (Internet Key Exchange) is configured in two negotiations. Phase 1 authenticates the VPN Clients to each other by confirming the matching Pre-Shared Key with the two gateways. IPSec is the Phase 2 of the VPN process.

Manually configuring a VPN tunnel profile.

IKE (Phase 1) Proposal

Exchange: Click the drop-down menu to select the type of exchange (Main Mode, Aggressive Mode).

DH Group: Click the drop-down menu to select the DH group (group 1, group 2, group 5, group 14).

Encryption: Click the drop-down menu to select the type of encryption (DES, 3DES, AES128, AES192, AES256).

Authentication: Click the drop-down menu to select the authentication protocol (MD5, SHA1).

Life Time: Enter the life time value for Phase 1. The life time value should be greater than Phase 2 (IPSec). 86400 sec. (1 day) is a common default and is a normal value for Phase 1.

IPSec (Phase 2) Proposal

Protocol: Click the drop-down menu to select the protocol type (ESP, AH)

Encryption: Click the drop-down menu to select the type of encryption (DES, 3DES, AES128, AES192, AES256).

The screenshot shows the configuration window for a Security Association (SA). It has four tabs: General, SA (selected), Network, and Advanced. The configuration is split into two main sections: IKE (Phase 1) Proposal and IPSec (Phase 2) Proposal. In the IKE section, Exchange is set to Main Mode, DH Group to Group 2, Encryption to 3DES, Authentication to SHA1, and Life Time to 28800. In the IPSec section, Protocol is set to ESP, Encryption to 3DES, Authentication to SHA1, Perfect Forward Security is disabled, DH Group to Group 2, and Life Time to 28800. There are Apply and Cancel buttons at the bottom right.

Authentication: Click the drop-down menu to select the authentication protocol (MD5, SHA1).

Perfect Forward Secrecy (PFS): Select enable to enable PFS. A fresh DH key is generated during IKE phase II and renewed for each key exchange to eliminate dependencies between the keys.

DH Group: Click the drop-down menu to select the DH group (group 1, group 2, group 5, group 14).

Life Time: Enter the life time value for Phase 2. The life time value should be smaller than Phase 1 (IKE). 3600 sec. (1 hour) is a common value for Phase 2.

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

Cancel: Click **Cancel** to delete the changes.

Network

Manually configuring a VPN tunnel profile.

Security Gateway Type: Click the drop-down menu to select the Security Gateway Type (IP Address, Domain Name)

Security Gateway: Enter the gateway value as defined in Security Gateway Type.

Local Network

Local Address: Enter the IP address of the local PC.

Local Netmask: Enter the netmasks of the local PC.

Remote Network

Remote Address: Enter the IP address of the remote PC.

Remote Netmask: Enter the netmask of the remote PC.

Apply: Click Apply to save the changes.

Cancel: Click Cancel to delete the changes.

The screenshot shows a configuration window with four tabs: General, SA, Network (selected), and Advanced. The Network tab contains the following fields:

- Security Gateway Type:** A drop-down menu currently showing "IP Address".
- Security Gateway:** A text input field.
- Local Network:** A section header.
- Local Address:** A text input field.
- Local Netmask:** A text input field.
- Remote Network:** A section header.
- Remote Address:** A text input field.
- Remote Netmask:** A text input field.

At the bottom right of the window are two buttons: "Apply" and "Cancel".

Advanced

Manually configuring a VPN tunnel profile.

NAT Traversal: Select enable to enable the NAT Traversal function in order to hide the private IP address from public view.



Note: Services such as VoIP require the use of a private IP address.

Dead Peer Detection:

Apply: Click Apply to save the changes.

Cancel: Click Cancel to delete the changes.

The screenshot shows a configuration window with four tabs: General, SA, Network, and Advanced. The Advanced tab is active. It contains two settings: NAT Traversal, which is set to Enable (radio button selected), and Dead Peer Detection, which is set to Disable (radio button selected). At the bottom right, there are two buttons: Apply and Cancel.

Configuring a User Setting

The User Setting function allows you to create user profiles in order to setup login access to the VPN service.

Name

Enter the name of the new user profile.

Password

Enter the password for the user name.

Confirm

Enter the password a second time to confirm the setting.

Add

Click Add to accept the profile and add it to the Current VPN User Table.

Reset

Click Reset to clear the new settings.

Current VPN User Table

Displays the User ID, User Name and Selection status.

Delete Selected

Click to delete the selected user profile.

Delete All

Click to delete all the current user profiles.



The screenshot shows a web-based configuration interface for user settings. It features three input fields: 'Name' with the text 'user name', 'Password' with four asterisks, and 'Confirm' with four asterisks. Below these fields are two buttons: 'Add' and 'Reset'. Underneath is a table titled 'Current VPN User Table' with three columns: 'No.', 'User Name', and 'Select'. The table contains two rows: the first row has '1' in the 'No.' column, 'Vincent' in the 'User Name' column, and a checkbox in the 'Select' column; the second row has '2' in the 'No.' column, 'vpnuser' in the 'User Name' column, and a checkbox in the 'Select' column. Below the table are three buttons: 'Delete Selected', 'Delete All', and 'Reset'. At the bottom right of the interface are two buttons: 'Apply' and 'Cancel'.

No.	User Name	Select
1	Vincent	<input type="checkbox"/>
2	vpnuser	<input type="checkbox"/>

Reset

Click to clear the selections from the Current VPN User Table.

Apply

Click to accept save the new settings.

Cancel

Click to clear the new changes.

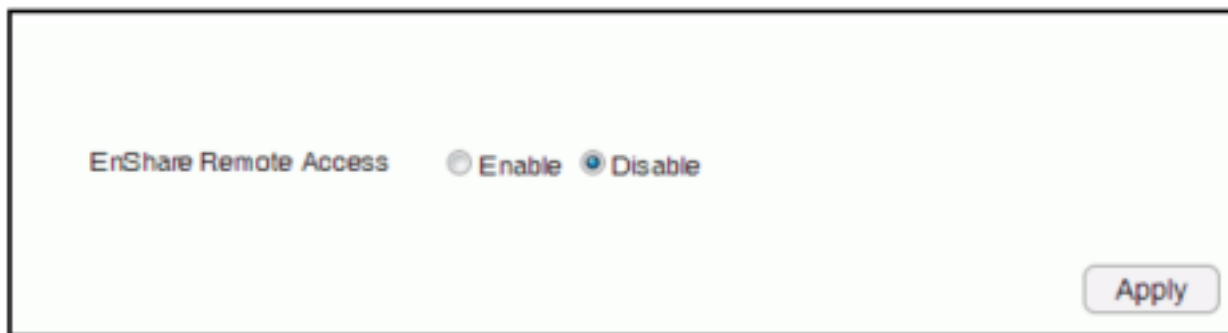
USB Port

The ESR900 router is equipped with a USB port for connecting a hard drive so media content can be accessed or transferred to other devices in the home or devices away from home.

Viewing EnShare

The EnShare feature allows you to access media content stored on a USB hard drive connected to the router's USB port in the home and when you are away from home when you have access to the Internet.

By default the EnShare feature is enabled.

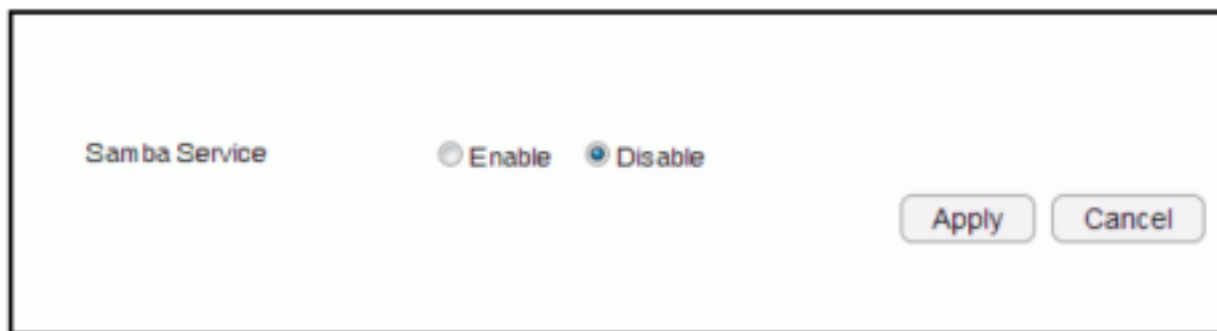


To **view** the EnShare settings or **disable** EnShare, click **USB Port** then select **EnShare**.

1. Select **Disable** to disable the EnShare feature.
2. Click **Apply** to save the new settings.

File Sharing

The File Sharing function allows you to provide users the ability to share files over the network through the Samba service. **By default the EnShare feature is enabled.**



To view the File Sharing settings, click **USB Port** then select **File Sharing**.

1. Select **Enable** to enable the Samba Service function.
2. Click **Apply** to save the new settings, or click **Cancel** to delete the changes.

Viewing File Server

The File Server function allows you to provide network users FTP access to shared USB stored files.

To view the File Server settings, click **USB Port** then select **File Server**.

Enable FTP Service

Select this to enable the FTP service to share files on the USB device

Port Number

Define the port number (default: 21) to open for the FTP service.

Login Timeout

Define the period of inactivity (default: 90) before a user is logged out.

Stay Timeout

Define the lockout period (default: 90) before a user is allowed to attempt a login.

Login User

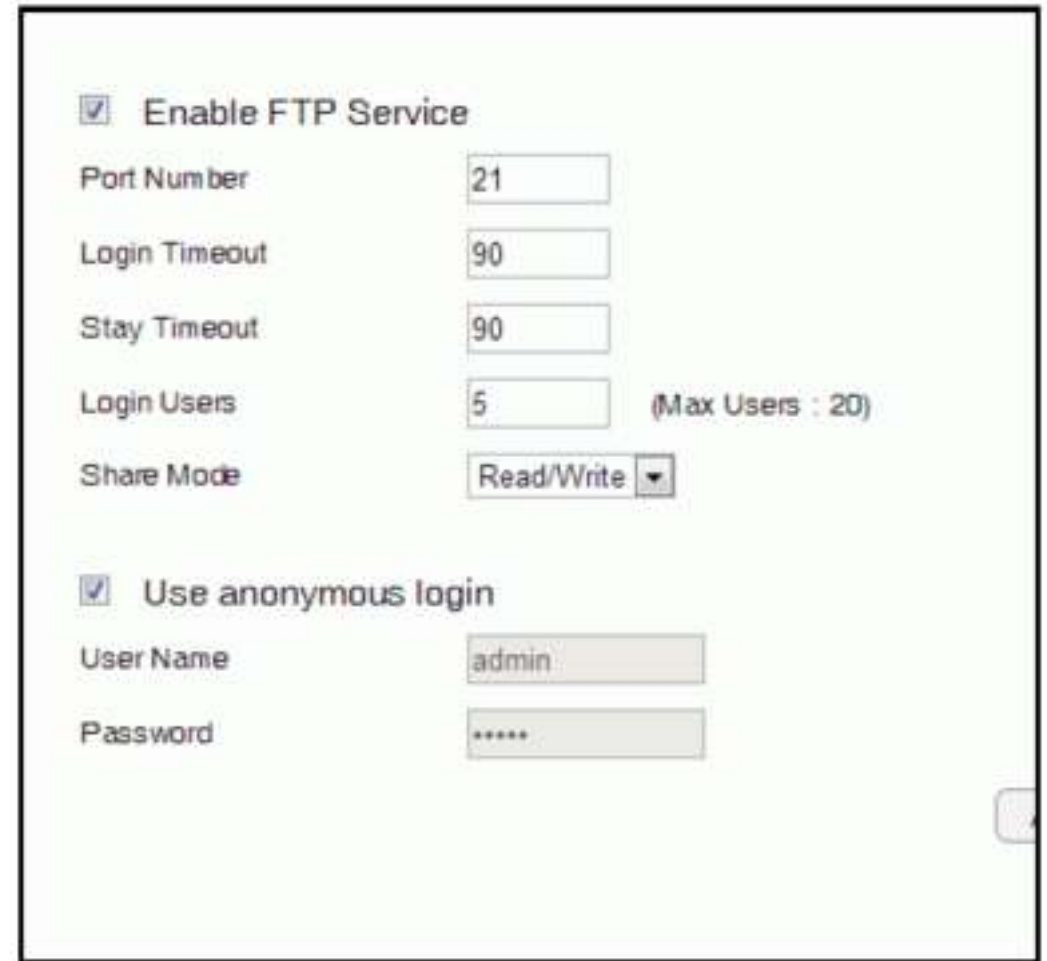
Define the number of concurrent users to access the service (Max: 20 users)

Share Mode

Define the type of share privilege: Read/Write, Read only.

Use Anonymous Login

Select this to allow anonymous user login.



The screenshot shows a configuration window for the File Server. It contains the following settings:

- Enable FTP Service**
- Port Number: 21
- Login Timeout: 90
- Stay Timeout: 90
- Login Users: 5 (Max Users : 20)
- Share Mode: Read/Write
- Use anonymous login**
- User Name: admin
- Password: *****

User Name

Enter the user name to login to the FTP service.

Password

Enter the password to login to the FTP service.

Viewing DLNA

The DLNA Media Server function allows you to transfer photos, music and video between networked devices through the ESR Series Router.

To view the DLNA settings, click **USB Port** then select **DLNA**.

1. Select **Enable** to enable the DLNA Media Server function.
2. In the Share Folder Name, enter the name of the shared folder.
3. Click **Apply** to save the new settings, or **Cancel** to clear the changes.



The screenshot shows a configuration window for the DLNA Media Server. It features a checked checkbox labeled "Enable DLNA Media Server". Below this, there is a text input field labeled "Share Folder Name" containing the text "video". At the bottom right of the window, there are two buttons: "Apply" and "Cancel".

Advanced Network Settings

NAT Setup

Network Address Translation (NAT) allows users on the LAN to access the Internet through a single Public IP Address or multiple Public IP Addresses. NAT provides firewall protection from hacker attacks and allows for mapping LAN IP addresses to WAN IP addresses with key services such as websites, FTP, and video game servers.

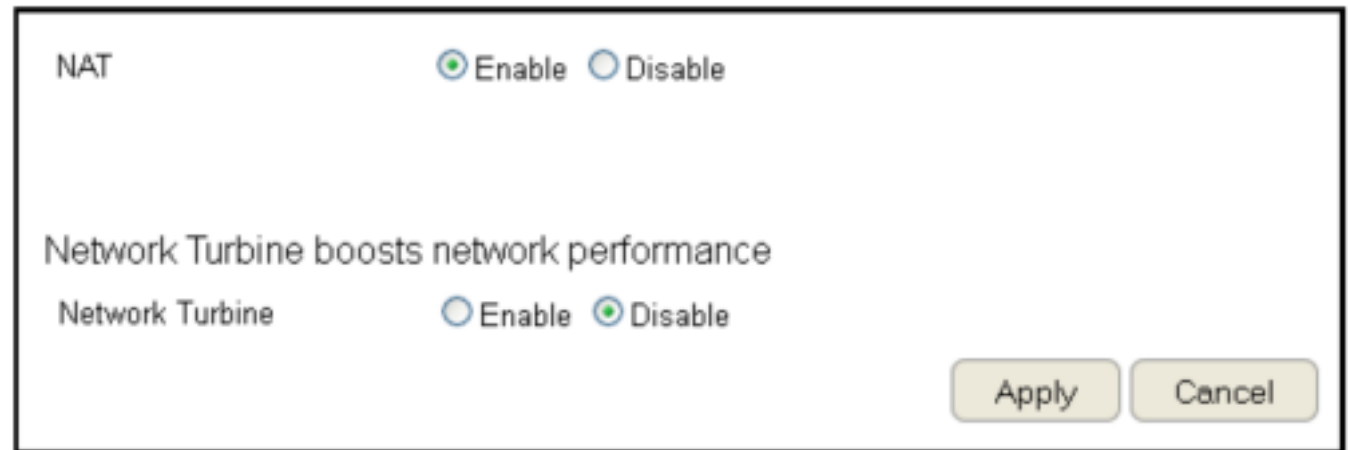
To view the NAT settings, click **Advanced** then select **NAT**.

NAT

Enable or Disable the NAT.

Network Turbine

Enable or Disable the network turbine.



The screenshot shows a settings window with two sections. The first section is titled 'NAT' and has two radio buttons: 'Enable' (which is selected) and 'Disable'. The second section is titled 'Network Turbine boosts network performance' and has two radio buttons: 'Enable' and 'Disable' (which is selected). At the bottom right of the window are two buttons: 'Apply' and 'Cancel'.



Note: The network turbine is designed to improve the router's performance. There is about 20~30% improvement when the network turbine is enabled.



Note: The network turbine may cause problems with the Internet connection. Disable the network turbine function if you experience connection issues.

Click **Apply** to save the settings or **Cancel** to discard changes.

Port Mapping Setup

Port Mapping allows you to redirect a particular range of service port numbers from the WAN to a particular LAN IP address.

To view the Port Mapping settings, click **Advanced** then select **Port Mapping**.

Enable Port Mapping

Click Enable Port Mapping to activate port mapping.

Description

Enter notes or details about the mapped port range configuration.

Local IP

Enter the local IP address of the server behind the NAT firewall.

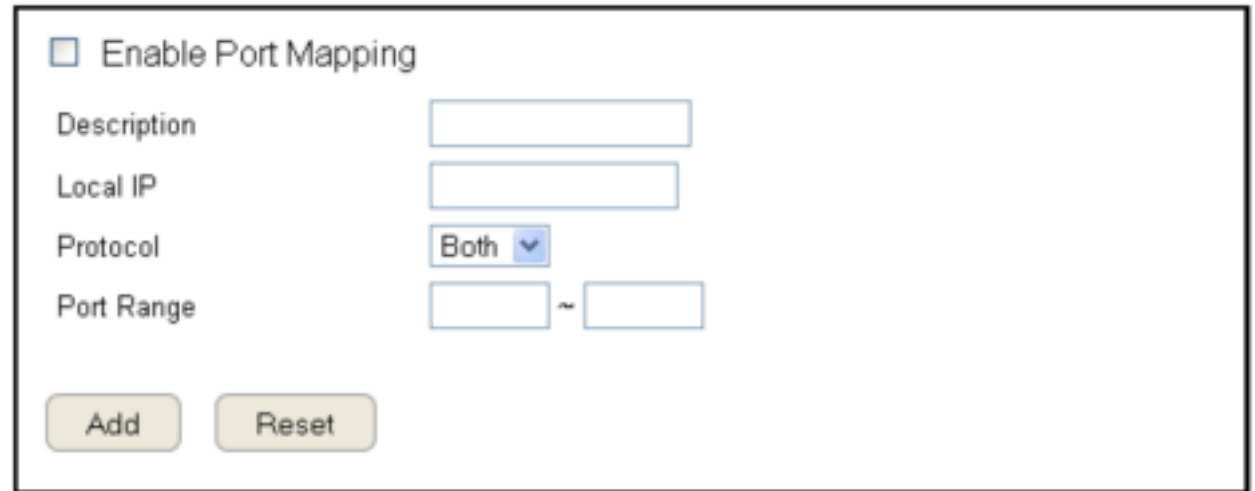
Protocol

Select the protocol to use for mapping from the following: TCP, UDP or Both.

Port Range

Enter the range of ports to be forwarded.

Click **Add** to append a new device to the list or **Reset** to discard changes.



The screenshot shows a configuration window for Port Mapping. At the top, there is a checkbox labeled "Enable Port Mapping" which is currently unchecked. Below this are four input fields: "Description" (a text box), "Local IP" (a text box), "Protocol" (a dropdown menu with "Both" selected), and "Port Range" (two text boxes separated by a tilde symbol). At the bottom of the window, there are two buttons: "Add" and "Reset".

Current Port Mapping Table

Displays a list of mapped port ranges in use on the network.

No. (Number)

The sequence number of the mapped port range.

Description

Notes or details about the mapped port range.

Local IP

IP address of the server for the mapped port range.

Type

The protocol used to communicate with the WAN ports and LAN server.

Port Range

The range of mapped ports.

Select

Indicates the device(s) that can have actions performed on them.

Click **Delete Selected** to remove selected devices from the list.

Click **Delete All** to remove all devices from the list.

Click **Reset** to discard changes.

Click **Apply** to save the settings or **Cancel** to discard changes.

The screenshot shows a web interface titled "Current Port Mapping Table". It features a table with the following columns: "No.", "Description", "Local IP", "Type", "Port Range", and "Select". Below the table, there are five buttons: "Delete Selected", "Delete All", "Reset", "Apply", and "Cancel". The "Delete Selected", "Delete All", and "Reset" buttons are positioned in a row, while "Apply" and "Cancel" are positioned below them to the right.

Port Forwarding Setup

Port forwarding enables multiple server applications on a LAN to serve clients on a WAN over a single WAN IP address. The router accepts incoming client packets, filters them based on the destination WAN, or public, port and protocol and forwards the packets to the appropriate LAN, or local, port. Unlike the DMZ feature, port forwarding protects LAN devices behind the firewall.

To view the Port Forwardung settings, click **Advanced** then select **Port Forwarding**.

Enable Port Forwarding

Click Enable Port Forwarding to active port forwarding.

Description

Enter notes or details about the forwarded port configuration.

Local IP

Enter the local IP address of the server behind the NAT firewall.

Protocol

Select the protocol to use for mapping from the following: TCP, UDP or Both.

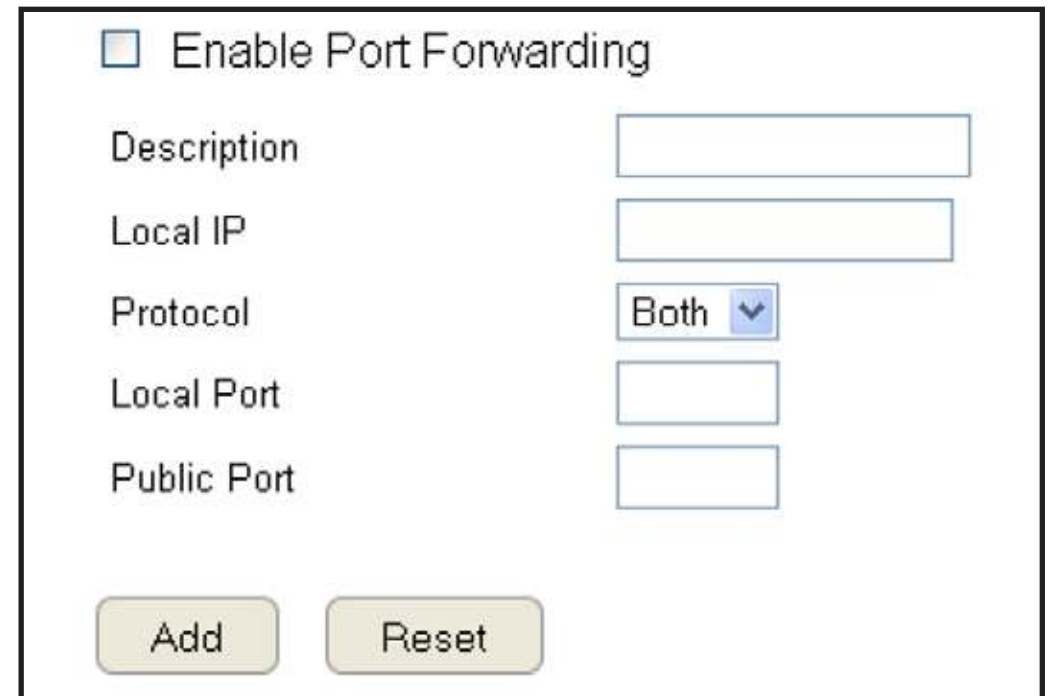
Local Port

Enter the LAN port number that WAN client packets will be forward to.

Public Port

Enter the WAN port number that clients will send their packets to.

Click **Add** to append a new configuration to the table or **Reset** to discard changes.



The screenshot shows a configuration window for port forwarding. At the top, there is a checkbox labeled "Enable Port Forwarding". Below this, there are several input fields: "Description" (a text box), "Local IP" (a text box), "Protocol" (a dropdown menu currently set to "Both"), "Local Port" (a text box), and "Public Port" (a text box). At the bottom of the window, there are two buttons: "Add" and "Reset".

Current Port Forwarding Table

The table of current port forwarding configurations.

Click **Delete Selected** to remove selected devices from the list.

Click **Delete All** to remove all devices from the list.

Click **Reset** to discard changes.

Click **Apply** to save the settings or **Cancel** to discard changes.

Current Port Forwarding Table

No.	Description	Local IP	Local Port	Type	Public Port	Select
-----	-------------	----------	------------	------	-------------	--------

Port Triggering Setup

Some applications, such as online games, videoconferencing and VoIP telephony, require multiple ports for inbound and outbound traffic. If an application requires simultaneous use of incoming and an outgoing ports, configure port triggering to map a local port or range of ports to a specific public port. Sending packets out over the local port triggers the router to open an incoming local port that is mapped to the same public port and application as the outgoing local port(s). The local application can communicate over the incoming and outgoing ports without the need for creating a fixed address.

To view the Port Triggering settings, click **Advanced** then select **Port Triggering**.

Enable Port Triggering

Click Enable Trigger Port to activate port triggering.

Description

Enter notes or details about the port triggered configuration.

Popular Applications

Select a default application or add a new one.

Trigger Port

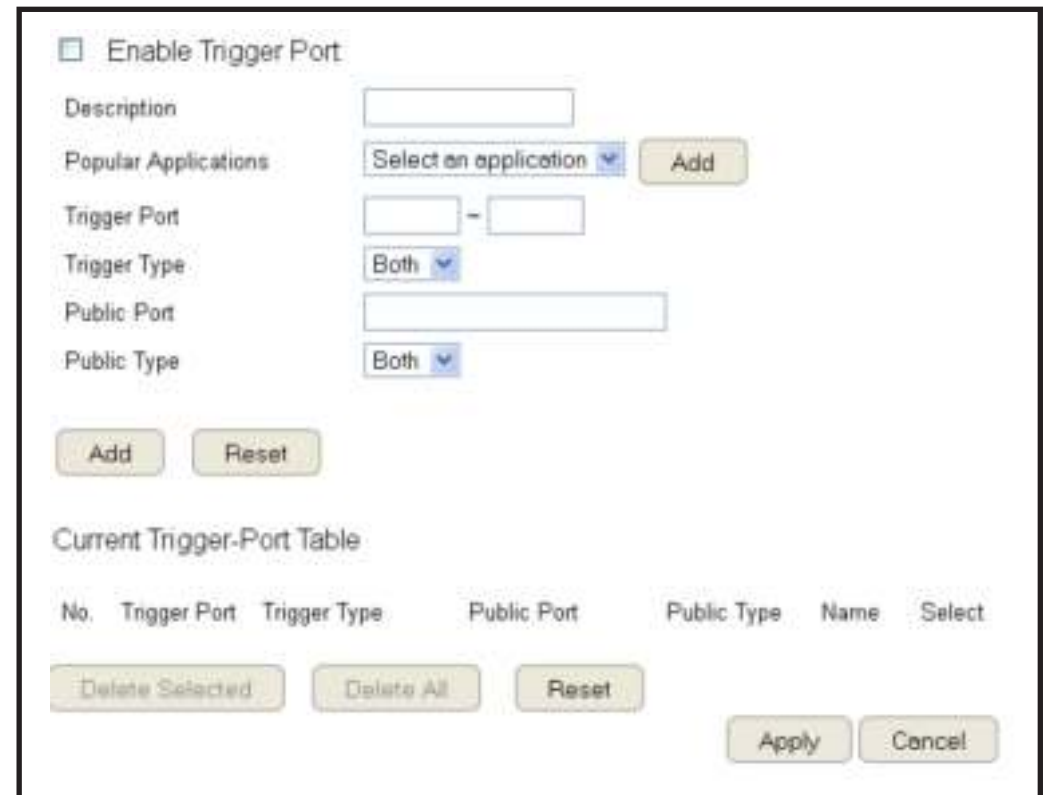
Enter the application's outbound port number(s).

Trigger Type

Select the protocol to use for port triggering from the following: TCP, UDP or Both.

Public Port

Enter the inbound port(s) for the application in the following format: 2300-2400 or 47624.



The screenshot shows the Port Triggering configuration interface. It includes a checkbox for "Enable Trigger Port", a "Description" text field, a "Popular Applications" section with a dropdown menu and an "Add" button, "Trigger Port" and "Public Port" text fields, and dropdown menus for "Trigger Type" and "Public Type". Below these are "Add" and "Reset" buttons. The "Current Trigger-Port Table" section contains a table with columns for "No.", "Trigger Port", "Trigger Type", "Public Port", "Public Type", "Name", and "Select". Below the table are "Delete Selected", "Delete All", and "Reset" buttons. At the bottom right are "Apply" and "Cancel" buttons.

No.	Trigger Port	Trigger Type	Public Port	Public Type	Name	Select
-----	--------------	--------------	-------------	-------------	------	--------

Public Type

Select the protocol to use for the inbound port from the following: TCP, UDP or Both.

Click **Add** to append a new configuration to the table or **Reset** to discard changes.

Current Port Triggering Table

The list of current port triggering configurations.

Click Delete Selected to remove selected devices from the list.

Click **Delete All** to remove all devices from the list.

Click **Reset** to discard changes.

Click **Apply** to save the settings or **Cancel** to discard changes.

Current Trigger-Port Table

No.	Trigger Port	Trigger Type	Public Port	Public Type	Name	Select
-----	--------------	--------------	-------------	-------------	------	--------

Application Layer Gateway Setup

The ALG (Application Layer Gateway) serves as a window between correspondent application processes so that they may exchange information on an open environment.

To view the ALG settings, click **Advanced** then select **ALG**.

Select the listed applications that need ALG support and then the router will authorize them to pass through the NAT gateway. Click **Apply** to save the settings or **Cancel** to discard changes.

Description	Select
TFTP	<input type="checkbox"/>
IPsec	<input type="checkbox"/>
FTP	<input type="checkbox"/>
SIP	<input type="checkbox"/>
RTSP	<input type="checkbox"/>

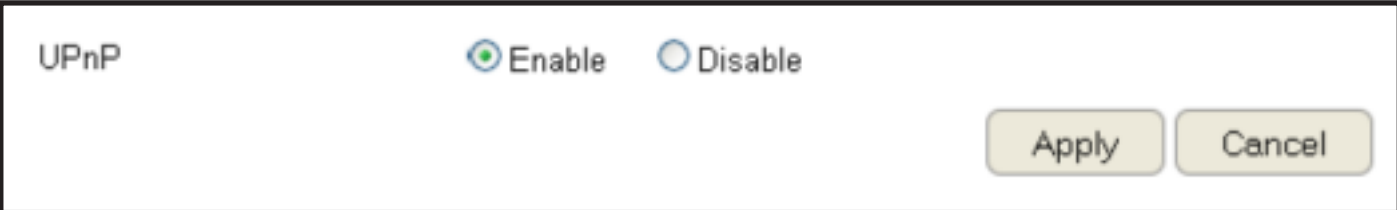
Universal Plug and Play Setup

UPnP helps internet devices, such as gaming and videoconferencing, to access the network and connect to other registered UPnP devices.

To view the UPnP settings, click **Advanced** then select **UPnP**.

Click **Enable** or **Disable** to activate or deactivate UPnP.

Click **Apply** to save the settings or **Cancel** to discard changes.



UPnP Enable Disable

Internet Group Multicast Protocol Setup

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

To view the IGMP settings, click **Advanced** then select **IGMP**.

Click **Enable** or **Disable** to activate or deactivate IGMP.

Click **Apply** to save the settings or **Cancel** to discard changes.



Note: Disabling the Multicast function may cause IP based multimedia devices, such as an IP-STB or OTT box, may lose connectivity with the media streaming server.

Quality of Service Setup

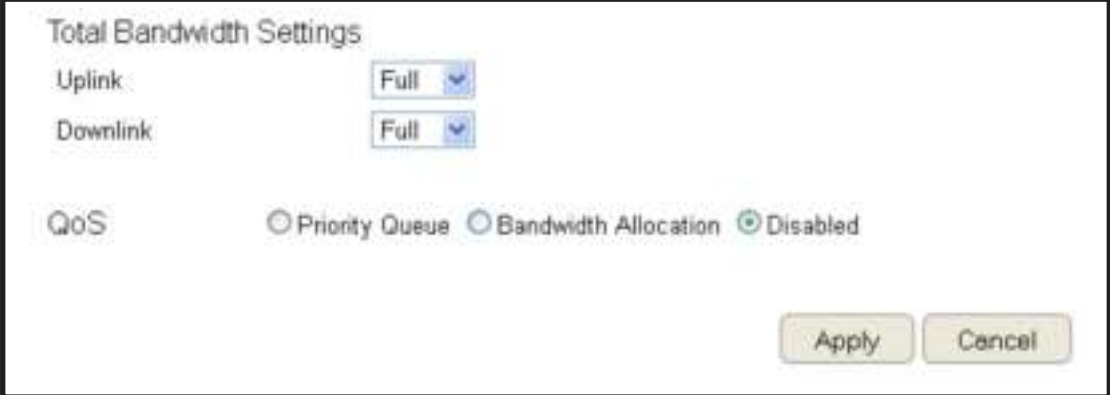
QoS can prioritize bandwidth use such as video streaming, online gaming, VoIP telephony and videoconferencing to ensure stable and efficient network performance.

To view the QoS settings, click **Advanced** then select **QoS**.

Total Bandwidth Settings

Uplink Select the maximum bandwidth speed for outbound traffic.

Downlink Select the maximum bandwidth speed for inbound traffic.



Total Bandwidth Settings

Uplink: Full

Downlink: Full

QoS: Priority Queue Bandwidth Allocation Disabled

Apply Cancel

Note: Click **Disabled** if you do not want to prioritize any data or protocol.

Priority Queue

Set network resource usage based on specific protocols or port ranges. Incoming packets are processed based on the protocols' position within the queue.

Unlimited Priority Queue

Local IP Address

Enter the local IP address of a device on the network. This device's activity is not restricted by the QoS feature.

High/Low Priority Queue

Specify the priority for different protocols. Additional protocols and port ranges can be added.

Click **Apply** to save the settings or **Cancel** to discard changes.

The screenshot shows a configuration window with two sections: 'Unlimited Priority Queue' and 'High/Low Priority Queue'.

Unlimited Priority Queue

Local IP Address	Description
<input type="text"/>	The IP address will not be bounded in the QoS limitation

High/Low Priority Queue

Protocol	High Priority	Low Priority	Specific Port
FTP	<input type="radio"/>	<input checked="" type="radio"/>	20,21
HTTP	<input type="radio"/>	<input checked="" type="radio"/>	80
TELNET	<input type="radio"/>	<input checked="" type="radio"/>	23
SMTP	<input type="radio"/>	<input checked="" type="radio"/>	25
POP3	<input type="radio"/>	<input checked="" type="radio"/>	110
Name <input type="text"/>	<input type="radio"/>	<input checked="" type="radio"/>	Both <input type="text"/> ~ <input type="text"/>
Name <input type="text"/>	<input type="radio"/>	<input checked="" type="radio"/>	Both <input type="text"/> ~ <input type="text"/>
Name <input type="text"/>	<input type="radio"/>	<input checked="" type="radio"/>	Both <input type="text"/> ~ <input type="text"/>

Buttons: **Apply** **Cancel**

Bandwidth Allocation

Set network resource usage, for inbound and outbound traffic, based on local IP and port ranges.

Type

Select Download or Upload to specific the direction of packet traffic.

Local IP Range

Enter the local IP range of the current configuration.

Protocol

Select the protocol to manage for the current configuration.

Port Range

Enter the local port range of the current configuration.

Policy

Select Min or Max to specify the type of configuration policy.

Rate (bps)

Select the bandwidth rate, in bits per second (bps), of the current configuration.

Click **Add** to save the settings and list the configuration in the Current QoS table or **Reset** the discard changes.

Click **Apply** to save the settings or **Cancel** to discard changes.

The screenshot shows a configuration window for bandwidth allocation. It includes several dropdown menus and input fields:

- Type:** A dropdown menu set to "Download".
- Local IP range:** Two empty input boxes separated by a hyphen.
- Protocol:** A dropdown menu set to "ALL".
- Port Range:** Two empty input boxes separated by a hyphen.
- Policy:** A dropdown menu set to "Min".
- Rate(bps):** A dropdown menu set to "Full".

Below these fields are two buttons: "Add" and "Reset".

Underneath is a section titled "Current QoS Table" with a table header:

No.	Type	Local IP range	Protocol	Port Range	Policy	Rate(bps)	Select
-----	------	----------------	----------	------------	--------	-----------	--------

Below the table are three buttons: "Delete Selected", "Delete All", and "Reset".

At the bottom right of the window are two buttons: "Apply" and "Cancel".

Routing Setup

Typically static routing does not need to be setup because the router has adequate routing information after it has been configured for Internet access. Static routing is only necessary if the router is connected to network under a different subnets.

To view the Routing settings, click **Advanced** then select **Routing**.



Note: To enable a static routing, NAT must be disabled. If the router is connected with a network under the different subnet, the routing setup allows the network connection within two different subnets.

Enable Static Routing

Click Enable Static Routing to activate the feature.

Destination LAN IP

Enter the LAN IP address of the destination device.

Subnet Mask

Enter the Subnet Mask of the destination device.

Default Gateway

Enter the default gateway IP address for the destination device.

Hops

Enter the maximum number of hops within the static routing that a packet is allowed to travel.

Interface

Select LAN or WAN as the interface.

Enable Static Routing

Destination LAN IP

Subnet Mask

Default Gateway

Hops

Interface LAN ▾

Click **Add** to save the settings and list the configuration in the Current Static Routing table or **Reset** the discard changes.

View and select devices in the Current Static Routing Table.

Click **Delete Selected** or **Delete All** to remove devices from the table. Click **Reset** to stop.

Click **Apply** to save the settings or **Cancel** to discard changes.

Current Static Routing Table

No.	Destination LAN IP	Subnet Mask	Default Gateway	Hops	Interface	Select
-----	--------------------	-------------	-----------------	------	-----------	--------

Wake on LAN Setup

Wake on LAN setup (WOL) allows the administrator to activate a computer over the network.

To view the WOL settings, click **Advanced** then select **WOL**.

Enabling WOL over WAN

Click **Enable WOL over WAN** to activate the feature.

Server Port

Enter the server port of the device to activate.

Wake MAC Address

Enter the MAC address of the device to activate.

Click **Start** to activate the device.

Click **Apply** to save the settings or **Cancel** to discard changes.



The screenshot shows a configuration window for Wake on LAN. At the top, there is a checkbox labeled "Enable WOL over WAN" which is currently unchecked. Below this is a "Server Port" field containing the number "9". Underneath, the text "Wake On LAN" is displayed. Below that is a "Wake MAC Address" field, which is currently empty. To the right of this field is a "Start" button. At the bottom right of the window are two buttons: "Apply" and "Cancel".

System Time Setting

Change the system time of the ESR Series Router and setup automatic updates through a network time (NTP) protocol server or through a computer.

To view the Time settings, click **Tools** then select **Time**.

Synchronizing with an NTP Server

Time Setup

Select how the ESR Series Router obtains the current time.

Time Zone

Select the time zone for the ESR Series Router.

NTP Time Server

Enter the domain name or IP address of an NTP server.

Enabling Daylight Savings

Click to enable or disable daylight savings time.

Start Time

Select the date and time when daylight savings time starts.

End Time

Select the date and time when daylight savings time ends.

Click **Apply** to save the settings or **Cancel** to discard changes.



The screenshot shows the 'Time Setup' configuration page. It includes the following fields and options:

- Time Setup:** A dropdown menu set to 'Synchronize with the NTP Server'.
- Time Zone:** A dropdown menu set to '(GMT+08:00)Taipei, Taiwan'.
- NTP Time Server:** A text input field containing 'pool.ntp.org'.
- Enable Daylight Saving:** An unchecked checkbox.
- Start Time:** A series of four dropdown menus set to 'January', '1st', 'Sun', and '12 am'.
- End Time:** A series of four dropdown menus set to 'January', '1st', 'Sun', and '12 am'.
- Buttons:** 'Apply' and 'Cancel' buttons at the bottom right.

Synchronizing Time with a Computer

Time Setup

Select how the ESR Series Router obtains the current time.

Computer Date and Time

Displays system date and time from a computer.

Enable Daylight Saving

Click to enable or disable daylight savings time.

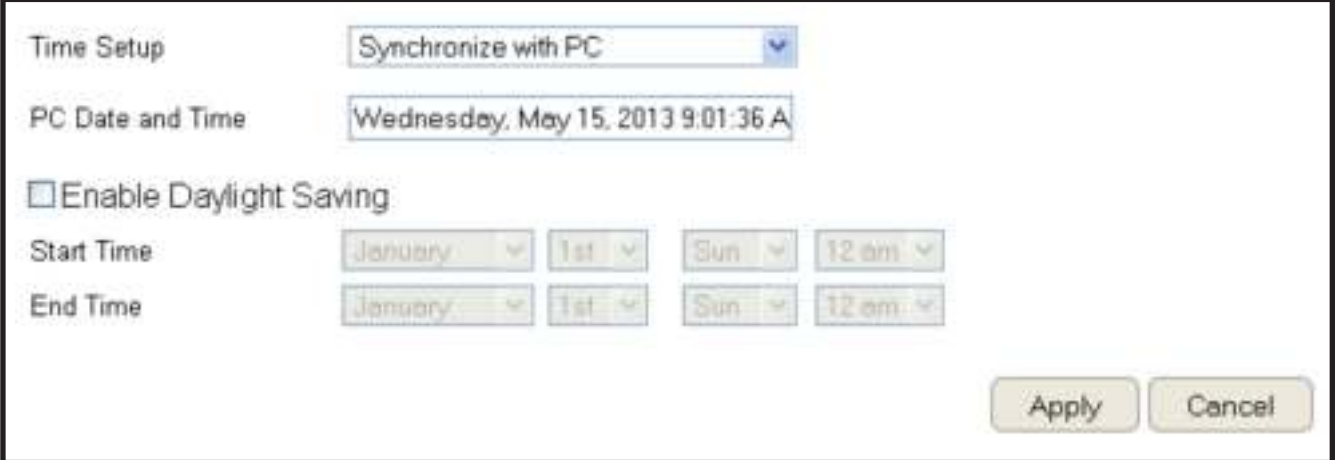
Start Time

Select the date and time when daylight savings time starts.

End Time

Select the date and time when daylight savings time ends.

Click **Apply** to save the settings or **Cancel** to discard changes.



The screenshot shows a web-based configuration interface for the router's time settings. It includes a dropdown menu for 'Time Setup' set to 'Synchronize with PC', a text field for 'PC Date and Time' showing 'Wednesday, May 15, 2013 9:01:36 A', an unchecked checkbox for 'Enable Daylight Saving', and two rows of date and time pickers for 'Start Time' and 'End Time', both currently set to 'January 1st Sun 12 am'. 'Apply' and 'Cancel' buttons are located at the bottom right.

Time Setup	Synchronize with PC			
PC Date and Time	Wednesday, May 15, 2013 9:01:36 A			
<input type="checkbox"/> Enable Daylight Saving				
Start Time	January	1st	Sun	12 am
End Time	January	1st	Sun	12 am

Apply Cancel

Dynamic Domain Name Service (DDNS) Setup

The most common use for DDNS is in allowing an Internet domain name to be assigned to a computer with a varying (dynamic) IP address. This makes it possible for other sites on the Internet to establish connections to the machine without needing to track the IP address themselves.

To view the DDNS settings, click **Tools** then select **DDNS**.

Dynamic DNS

Click to enable or disable DDNS.

Server Address

Select the server address.

Host Name

Enter the host name.

Username

Enter a username for the host service.

Password

Enter a password for the host service.

Click **Apply** to save the settings or **Cancel** to discard changes.

The screenshot shows the 'Dynamic DNS' configuration window. At the top, there are radio buttons for 'Enable' and 'Disable', with 'Disable' selected. Below this, there is a section for 'Default EnGenius DDNS service'. It includes a 'Default DDNS Name' field with the value '004602.engeniusddns.com', a 'Domain Name' field with 'engeniusddns.com', and a 'Check Available' button. The 'Refresh Time' is set to '24HR' in a dropdown menu, and the 'Status' is 'Disconnected'. There is also an option 'The domain name is available.' which is currently unselected. Below this, there are fields for 'Server Address' (set to '3322(qdns)'), 'Host Name', 'Username', and 'Password'. At the bottom right, there are 'Apply' and 'Cancel' buttons.

Diagnosis that Client Devices Are Connected to the Router

The diagnosis feature allows the administrator to verify that a client device is available on the network and is accepting request packets. If the ping result returns alive, it means a device is connected. This feature does not work if the target device is behind a firewall or has security software installed.

To view the Diagnosis settings, click **Tools** then select **Diagnosis**.

Diagnosing a Network Connection Problem

Address to Ping

Enter IP address of the device to ping.

Ping Frequency

Select the interval, in seconds, that the ping message is sent out.

Click **Start** to begin the diagnosis.

Address to Ping	<input type="text"/>	Start
Ping Result	<input type="text"/>	

Upgrading The Router's Firmware

Firmware is the router's system software that operates and allows the administrator to interact with it.

To view the Firmware settings, click **Tools** then select **Firmware**.



WARNING! Upgrading firmware through a wireless connection is not recommended. Firmware upgrading must be performed while connected to an Ethernet (LAN port) with all other clients disconnected.

To update the firmware version, follow these steps:

1. Download the appropriate firmware approved by EnGenius from an EnGenius web site. See the **Downloads tab on the product page for this product**. For new products, new firmware may not be readily available.
2. Click **Choose File**.
3. Browse the file system and select the firmware file.
4. Click **Apply**.

You can upgrade the firmware of the router in this page. Ensure, the firmware you want to use is on the local hard drive of your computer. Click on Browse to browse and locate the firmware to be used for your update.

Backing Up The Router's Settings

Save them as a configuration file on your computer.

To view the Back-up settings, click **Tools** then select **Back-up**.

Restoring to the router's Factory Default settings

Click **Reset** to restore the ESR Series Router to factory defaults.

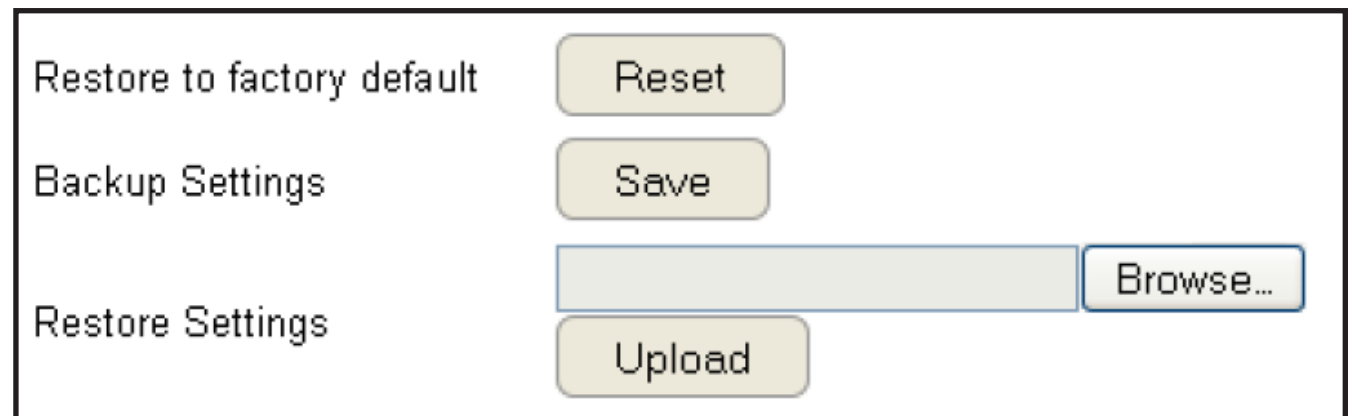
Backup Settings

Click **Save** to save the current configuration on the router to a *.dlf file.

Restore Settings

To restore saved settings, do the following:

- a. Click **Choose File**.
- b. Browse the file system for location of the settings file (*.dlf).
- c. Click **Upload**.



Rebooting the Router

This feature allows you to reboot the router in the event of a system hang up or other disruption to the network.

To view the Reset settings, click **Tools** then select **Reset**.

Click **Apply** to reset the device.

In the event the system stops responding correctly or stops functioning, you can perform a reset. Your settings will not be changed. To perform the reset, click on the APPLY button.

Apply

Appendix



Wall Mounting The Router

The following are instructions if you choose to mount the router on a wall.



Note: Choose a location that is within reach of an electrical outlet for the AC adapter and the DSL or Cable modem.

To mount the device on the wall do the following:

1. Measure the distance from the middle of each mounting screw hole.
2. Mark the locations of the screw holes on the wall.
3. Drill a hole for each marked location and insert a screw in each.



Note: Make sure to leave enough of the screw head above the wall surface to secure the router.

4. Install and secure the mounts onto the router.
5. Install the router on the wall.



Federal Communication Commission Interference Statement

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

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



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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement



Important: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device complies with FCC RF Exposure limits set forth for an uncontrolled environment, under 47 CFR 2.1093 paragraph (d)(2). This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada Statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.



Important:

Radiation Exposure Statement: This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.