

SSID Selection :	EnGeniusCCDD10
Broadcast SSID :	Enable
WMM :	Enable
Encryption :	WPA pre-shared key
WPA type :	<input checked="" type="radio"/> WPA(TKIP) <input type="radio"/> WPA2(AES) <input type="radio"/> WPA2 Mixed
Pre-shared Key type :	Passphrase
Pre-shared Key :	

WPA-Radius Encryption

Wi-Fi Protected Access (**WPA**) is an advanced security standard. You can use an external RADIUS server to authenticate wireless stations and provide the session key to encrypt data during communication.

It uses **TKIP** or CCMP (**AES**) to change the encryption key frequently. Press **<Apply>** button when you are done.

SSID Selection :	EnGeniusCCDD10
Broadcast SSID :	Enable
WMM :	Enable
Encryption :	WPA RADIUS
WPA type :	<input checked="" type="radio"/> WPA(TKIP) <input type="radio"/> WPA2(AES) <input type="radio"/> WPA2 Mixed
RADIUS Server IP address :	
RADIUS Server port :	1812
RADIUS Server password :	

- MAC Address Filtering

This wireless router supports MAC Address Control, which prevents unauthorized clients from accessing your wireless network.

The screenshot shows the 'Filter' tab in a wireless router's configuration interface. At the top, there are tabs for 'Basic', 'Advanced', 'Security', 'Filter', 'WPS', 'Client List', and 'Policy'. Below the tabs, a message states: 'For security reason, the Access Point features MAC Address Filtering which only allows authorized MAC Addresses to associate with the Access Point.' There is a checkbox labeled 'Enable Wireless Access Control' which is currently unchecked. Below this, there are two input fields: 'Description' and 'MAC address'. Under these fields are 'Add' and 'Reset' buttons. Below the input fields is a section titled 'MAC Address Filtering Table:' which contains a table with four columns: 'NO.', 'Description', 'MAC address', and 'Select'. Below the table are three buttons: 'Delete Selected', 'Delete All', and 'Reset'. At the bottom right of the page are 'Apply' and 'Cancel' buttons.

Enable wireless access control: Enable the wireless access control function

Adding an address into the list

Enter the "MAC Address" and "Description" of the wireless station to be added and then click **<Add>**. The wireless station will now be added into the "MAC Address Filtering Table" below. If you are having any difficulties filling in the fields, just click "Reset" and both "MAC Address" and "Description" fields will be cleared.

Remove an address from the list

If you want to remove a MAC address from the "MAC Address Filtering Table", select the MAC address that you want to remove in the list and then click "Delete Selected". If you want to remove all the MAC addresses from the list, just click the **<Delete All>** button. Click **<Reset>** will clear your current selections.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- Wi-Fi Protected Setup (WPS)

WPS is the simplest way to establish a connection between the wireless clients and the wireless router. You don't have to select the encryption mode and fill in a long encryption passphrase every time when you try to setup a wireless connection. You only need to press a button on both wireless client and wireless router, and the WPS will do the rest for you.

The wireless router supports two types of WPS: WPS via Push Button and WPS via PIN code. If you want to use the Push Button, you have to push a specific button on the wireless client or in the utility of the wireless client to start the WPS mode, and switch the wireless router to WPS mode. You can simply push the WPS button of the wireless router, or click the 'Start to Process' button in the web configuration interface. If you want to use the PIN code, you have to know the PIN code of the wireless client and switch it to WPS mode, then fill-in the PIN code of the wireless client through the web configuration interface of the wireless router.

Basic	Advanced	Security	Filter	WPS	Client List	Policy
WPS: <input checked="" type="checkbox"/> Enable						
Wi-Fi Protected Setup Information						
WPS Current Status: unConfigured						
Self Pin Code: 34259368						
SSID: EnGeniusCCDD10						
Authentication Mode: Disable						
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: Check the box to enable WPS function and uncheck it to disable the WPS function.

WPS Current Status: If the wireless security (encryption) function of this wireless router is properly set, you'll see a 'Configured' message here. Otherwise, you'll see '**UnConfigured**'.

Self Pin Code: This is the WPS PIN code of the wireless router. You may need this information when connecting to other WPS-enabled wireless devices.

SSID: This is the network broadcast name (SSID) of the router.

Authentication Mode: It shows the active authentication mode for the wireless connection.

Passphrase Key: It shows the passphrase key that is randomly generated by the wireless router during the WPS process. You may need this information when using a device which doesn't support WPS.

Interface: If device is set to repeater mode, you can choose "**Client**" interface to connect with other AP by using WPS, otherwise you may choose "**AP**" interface to do WPS with other clients.

WPS via Push Button: Press the button to start the WPS process. The router will wait for the WPS request from the wireless devices within 2 minutes.

WPS via PIN: You can fill-in the PIN code of the wireless device and press the button to start the WPS process. The router will wait for the WPS request from the wireless device within 2 minutes.

- Client List

This WLAN Client Table shows the Wireless client associate to this Wireless Router.

Basic	Advanced	Security	Filter	WPS	Client List	Policy
-------	----------	----------	--------	-----	-------------	--------

WLAN Client Table :

This WLAN Client Table shows client MAC address associate to this Broadband Router

Interface	MAC address	Signal (%)	Idle Time
EnGeniusCCDD10	00:0C:43:28:70:00	100	5 secs

Refresh

- Policy

The Router can allow you to set up the Wireless Access Policy.

WAN Connection: Allow Wireless Client on specific SSID to access WAN port.

Communication between Wireless clients: Allow Wireless Client to communicate with other Wireless Client on specific SSID.

Communication between Wireless clients and wired clients: Allow Wireless Client to communicate with other Wireless Client on specific SSID and Wired Client on the switch. Or Wireless Client will allow to access WAN port only

Basic	Advanced	Security	Filter	WPS	Client List	Policy
-------	----------	----------	--------	-----	-------------	--------

SSID 1 Connection Control Policy

WAN Connection	Enable
Communication between Wireless clients	Enable
Communication between Wireless clients and Wired clients	Enable

Apply Cancel

5.5. Firewall Settings

The Router provides extensive firewall protection by restricting connection parameters, thus limiting the risk of hacker attacks, and defending against a wide array of common Internet attacks. However, for applications that require unrestricted access to the Internet, you can configure a specific client/server as a Demilitarized Zone (DMZ).

Enable	Advanced	DMZ	DoS	MAC Filter	IP Filter	URL Filter
---------------	-----------------	------------	------------	-------------------	------------------	-------------------

Firewall automatically detects and blocks Denial of Service (DoS) attacks. URL blocking, packet filtering and SPI (Stateful Packet Inspection) are also supported. The hackers attack will be recorded associated with timestamp in the security logging area.

Firewall : Enable Disable

Apply

Note: To enable the Firewall settings select Enable and click Apply

- Advanced

You can allow the VPN packets to pass through this Router.

Enable	Advanced	DMZ	DoS	MAC Filter	IP Filter	URL Filter
---------------	-----------------	------------	------------	-------------------	------------------	-------------------

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

Apply Cancel

- Demilitarized Zone (DMZ)

If you have a client PC that cannot run an Internet application (e.g. Games) properly behind the NAT firewall, then you can open up the firewall restrictions to unrestricted two-way Internet access by defining a DMZ Host. The DMZ function allows you to re-direct all

packets going to your WAN port IP address to a particular IP address in your LAN. The difference between the virtual server and the DMZ function is that the virtual server re-directs a particular service/Internet application (e.g. FTP, websites) to a particular LAN client/server, whereas DMZ re-directs all packets (regardless of services) from your WAN IP address to a particular LAN client/server.

Enable Advanced **DMZ** DoS MAC Filter IP Filter URL Filter

If you have a local client PC that cannot run an Internet application properly from behind the NAT firewall, you can open unrestricted two-way Internet access for this client by defining a Virtual DMZ Host.

Enable DMZ

Local IP Address : < Please select a PC. ▾

Apply Cancel


Enable DMZ: Enable/disable DMZ

LAN IP Address: Fill-in the IP address of a particular host in your LAN Network or select a PC from the list on the right that will receive all the packets originally from the WAN port/Public IP address.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- Denial of Service (DoS)

The Router's firewall can block common hacker attacks, including Denial of Service, Ping of Death, Port Scan and Sync Flood. If Internet attacks occur the router can log the events.



The screenshot shows a configuration interface with a horizontal menu at the top containing the following tabs: **Enable**, **Advanced**, **DMZ**, **DoS** (which is selected), **MAC Filter**, **IP Filter**, and **URL Filter**. Below the menu, there is a text box containing the following information: "The Firewall can detect and block DOS attacks, DOS (Denial of Service) attacks can flood your Internet Connection with invalid packets and connection requests, using so much bandwidth and so many resources that Internet access becomes unavailable." Below this text, there is a label "Block DoS :" followed by two radio buttons: "Enable" (which is selected) and "Disable". At the bottom right of the configuration area, there are two buttons: "Apply" and "Cancel".

Ping of Death: Protections from Ping of Death attack.

Discard Ping From WAN: The router's WAN port will not respond to any Ping requests

Port Scan: Protects the router from Port Scans.

Sync Flood: Protects the router from Sync Flood attack.

- MAC Filter

If you want to restrict users from accessing certain Internet applications / services (e.g. Internet websites, email, FTP etc.), and then this is the place to set that configuration. MAC Filter allows users to define the traffic type permitted in your LAN. You can control which PC client can have access to these services.

Enable Advanced DMZ DoS **MAC Filter** IP Filter URL Filter

MAC Filters are used to deny or allow LAN computers from accessing the Internet.

Enable MAC filtering

Deny all clients with MAC address listed below to access the network

Allow all clients with MAC address listed below to access the network

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

Add Reset

MAC Filtering table:

NO.	Description	LAN MAC Address	Select
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Delete Selected Delete All Reset

Apply Cancel

Enable MAC Filtering: Check to enable or disable MAC Filtering.

Deny: If you select “**Deny**” then all clients will be allowed to access Internet except the clients in the list below.

Allow: If you select “**Allow**” then all clients will be denied to access Internet except the PCs in the list below.

Add PC MAC Address

Fill in "**LAN MAC Address**" and **<Description>** of the PC that is allowed / denied to access the Internet, and then click **<Add>**. If you find any typo before adding it and want to retype again, just click **<Reset>** and the fields will be cleared.

Remove PC MAC Address

If you want to remove some PC from the "**MAC Filtering Table**", select the PC you want to remove in the table and then click **<Delete Selected>**. If you want to remove all PCs from the table, just click the **<Delete All>** button. If you want to clear the selection and re-select again, just click **<Reset>**.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- IP Filter

Enable Advanced DMZ DoS MAC Filter **IP Filter** URL Filter

IP Filters are used to deny or allow LAN computers from accessing the Internet.

Enable IP Filtering Table

Deny all clients with IP address listed below to access the network
 Allow all clients with IP address listed below to access the network

Description :

Protocol : Both

Local IP Address : ~

Port range : ~

Add Reset

NO.	Description	Local IP Address	Protocol	Port range	Select

Delete Selected Delete All Reset

Enable IP Filtering: Check to enable or uncheck to disable IP Filtering.

Deny: If you select “Deny” then all clients will be allowed to access Internet except for the clients in the list below.

Allow: If you select “Allow” then all clients will be denied to access Internet except for the PCs in the list below.

Add PC IP Address

You can click **<Add>** PC to add an access control rule for users by an IP address or IP address range.

Remove PC IP Address

If you want to remove some PC IP from the **<IP Filtering Table>**, select the PC you want to remove in the table and then click **<Delete Selected>**. If you want to remove all PCs from the table, just click the **<Delete All>** button.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- URL Filter

You can block access to some Web sites from particular PCs by entering a full URL address or just keywords of the Web site.

Enable URL Blocking

URL/keyword

Add Reset

Current URL Blocking Table:

NO.	URL/keyword	Select
1	hello	<input type="checkbox"/>

Delete Selected Delete All Reset

Apply Cancel

Enable URL Blocking: Enable or disable URL Blocking

Add URL Keyword

Fill in "URL/Keyword" and then click **<Add>**. You can enter the full URL address or the keyword of the web site you want to block. If you happen to make a mistake and want to retype again, just click "Reset" and the field will be cleared.

Remove URL Keyword

If you want to remove some URL keywords from the "**Current URL Blocking Table**", select the URL keyword you want to remove in the table and then click **<Delete Selected>**.

If you want remove all URL keywords from the table, click **<Delete All>** button. If you want to clear the selection and re-select again, just click **<Reset>**.

Click **<Apply>** at the bottom of the screen to save the above configurations

5.6. Advanced Settings

- Network Address Translation (NAT)

Network Address Translation (NAT) allows multiple users at your local site to access the Internet through a single Public IP Address or multiple Public IP Addresses. NAT provides Firewall protection from hacker attacks and has the flexibility to allow you to map Private IP Addresses to Public IP Addresses for key services such as Websites and FTP. Select Disable to disable the NAT function.



NAT(Network Address Translation) involves re-writing the source and/or destination addresses of IP packets as they pass through a Router or firewall, NAT enable multiple hosts on a private network to access the Internet using a single public IP address.

NAT: Enable Disable

Apply

- Port Mapping

Port Mapping allows you to re-direct a particular range of service port numbers (from the Internet / WAN Port) to a particular LAN IP address. It helps you to host servers behind the router NAT firewall.

NAT	Port map.	Port fw.	Port tri.	ALG	UPnP	QoS	Routing
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Entries in this table allow you to automatically redirect common network services to a specific PC behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the local network.

Enable Port Mapping

Description :

Local IP :

Protocol :

Port range : ~

Current Port Mapping Table:

NO.	Description	Local IP	Type	Port range	Select

Enable Port Mapping: Enable or disable port mapping function.

Description: description of this setting.

Local IP: This is the local IP of the server behind the NAT firewall.

Protocol: This is the protocol type to be forwarded. You can choose to forward “TCP” or “UDP” packets only, or select “BOTH” to forward both “TCP” and “UDP” packets.

Port Range: The range of ports to be forward to the private IP.

Add Port Mapping

Fill in the "Local IP", "Protocol", "Port Range" and "Description" of the setting to be added and then click "Add". Then this Port Mapping setting will be added into the "Current Port Mapping Table" below. If you find any typo before adding it and want to retype again, just click <Reset> and the fields will be cleared.

Remove Port Mapping

If you want to remove a Port Mapping setting from the "**Current Port Mapping Table**", select the Port Mapping setting that you want to remove in the table and then click **D<Delete Selected>**. If you want to remove all Port Mapping settings from the table, click **<Delete All>** button. Click **<Reset>** will clear your current selections.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- Port Forwarding (Virtual Server)

Use the Port Forwarding (Virtual Server) function when you want different servers/clients in your LAN to handle different service/Internet application type (e.g. Email, FTP, Web server etc.) from the Internet. Computers use numbers called port numbers to recognize a particular service/Internet application type. The Virtual Server allows you to re-direct a particular service port number (from the Internet/WAN Port) to a particular LAN private IP address (See Glossary for an explanation on Port number).

NAT Port map. **Port fw.** Port tri. ALG UPnP QoS Routing

You can configure the router as a Virtual Server allowing remote users to access services such as Web or FTP at your local PC. Depending on the requested service (TCP/UDP) port number, the router will redirect the external service request to the appropriate internal server (located at one of your local PCs).

Enable Port Forwarding

Description :

Local IP :

Protocol :

Local Port :

Public Port :

Current Port Forwarding Table :

Enable Port Forwarding: Enable or disable Port Forwarding.

Description: The description of this setting.

Local IP / Local Port: This is the LAN Client/Host IP address and Port number that the Public Port number packet will be sent to.

Protocol: Select the port number protocol type (TCP, UDP or both). If you are unsure, then leave it to the default "both" setting. Public Port enters the service (service/Internet application) port number from the Internet that will be re-directed to the above Private IP address host in your LAN Network.

Public Port: Port number will be changed to Local Port when the packet enters your LAN Network.

Add Port Forwarding

Fill in the "**Description**", "**Local IP**", "**Local Port**", "**Protocol**" and "**Public Port**" of the setting to be added and then click **<Add>** button. Then this Virtual Server setting will be added into the "**Current Port Forwarding Table**" below. If you find any typo before adding it and want to retype again, just click **<Reset>** and the fields will be cleared.

Remove Port Forwarding

If you want to remove Port Forwarding settings from the "**Current Port Forwarding Table**", select the Port Forwarding settings you want to remove in the table and then click "**Delete Selected**". If you want to remove all Port Forwarding settings from the table, just click the **<Delete All>** button. Click **<Reset>** will clear your current selections.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- Port Triggering (Special Applications)

Some applications require multiple connections, such as Internet games, video Conferencing, Internet telephony and others. In this section you can configure the router to support multiple connections for these types of applications.

The screenshot shows the 'Port tri.' tab in a router's configuration interface. At the top, there is a navigation bar with tabs for NAT, Port map., Port fw., Port tri., ALG, UPnP, QoS, and Routing. Below the navigation bar, a text box explains: 'Port Triggering, also called Special Applications allows you to use Internet applications which normally do not function when used behind a firewall.' There is a checkbox labeled 'Enable Trigger Port' which is currently unchecked. Below this are several configuration fields: 'Description :' with an empty text input; 'Popular applications :' with a dropdown menu showing 'Select an application' and an 'Add' button; 'Trigger port :' with two text input fields separated by a tilde (~); 'Trigger type :' with a dropdown menu set to 'Both'; 'Public Port :' with a text input field; and 'Public type :' with a dropdown menu set to 'Both'. At the bottom of the configuration area are 'Add' and 'Reset' buttons. Below the configuration area is a section titled 'Current Trigger-Port Table:' followed by a table with a header row and several empty rows.

Enable Trigger Port: Enable or disable the Port Trigger function.

Trigger Port: This is the outgoing (Outbound) range of port numbers for this particular application.

Trigger Type: Select whether the outbound port protocol is “TCP”, “UDP” or “BOTH”.

Public Port: Enter the In-coming (Inbound) port or port range for this type of application (e.g. 2300-2400, 47624)

Public Type: Select the Inbound port protocol type: “TCP”, “UDP” or “BOTH”

Popular Applications: This section lists the more popular applications that require multiple connections. Select an application from the Popular Applications selection. Once you have selected an application, select a location

(1-5) in the "Add" selection box and then click the <Add> button. This will automatically list the Public Ports required for this popular application in the location (1-5) you specified.

Add Port Triggering

Fill in the "Trigger Port", "Trigger Type", "Public Port", "Public Type", "Public Port" and "Description" of the setting to be added and then Click <Add>. The Port Triggering setting will be added into the "Current Trigger-Port Table" below. If you happen to make a mistake, just click <Reset> and the fields will be cleared.

Remove Port Triggering

If you want to remove Special Application settings from the "Current Trigger-Port Table", select the Port Triggering settings you want to remove in the table and then click <Delete Selected>. If you want remove all Port Triggering settings from the table, just click the <Delete All> button. Click <Reset> will clear your current selections.

- Application Layer Gateway (ALG)

You can select applications that need **ALG** support. The router will let the selected application to correctly pass through the NAT gateway.

NAT Port map. Port fw. Port tri. **ALG** UPnP QoS Routing

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

Description	Select
H323	<input type="checkbox"/>
MMS	<input type="checkbox"/>
TFTP	<input type="checkbox"/>
Egg	<input type="checkbox"/>
IRC	<input type="checkbox"/>
Amanda	<input type="checkbox"/>
Quake3	<input type="checkbox"/>
Talk	<input type="checkbox"/>
IPsec	<input type="checkbox"/>

- UPNP

With UPnP, all PCs in your Intranet will discover this router automatically. So, you don't have to configure your PC and it can easily access the Internet through this router.

Wireless Network Broadband Router AP Router Mode ▾

NAT Port map. Port fw. Port tri. **ALG** **UPnP** QoS Routing

Universal Plug and Play is designed to support zero-configuration, "invisible" networking, and automatic discovery for a range of device from a wide range of vendors. With UPnP, a device can dynamically join a network, obtain an IP address and learn about the presence and capabilities of other devices all automatically. Devices can subsequently communicate with each other directly.

UPnP : Enable Disable

Enable/Disable UPnP: You can enable or Disable the UPnP feature here. After you enable the UPnP feature, all client systems that support UPnP, like Windows XP, can discover this router automatically and access the Internet through this router without having to configure anything. The NAT Traversal function provided by UPnP can let applications that support UPnP connect to the internet without having to configure the virtual server sections.

- Quality of Service (QoS)

QoS can let you classify Internet application traffic by source/destination IP address and port number. You can assign priority for each type of application and reserve bandwidth for it. The packets of applications with higher priority will always go first. Lower priority applications will get bandwidth after higher priority applications get enough bandwidth. This can let you have a better experience in using critical real time services like Internet phone, video conference ...etc. All the applications not specified by you are classified as rule "Others".

Priority Queue

This can put the packets of specific protocols in High/Low Queue. The packets in High Queue will process first.

Quality of Service (QoS) refers to the capability of a network to provide better service to selected network traffic. The primary goal of QoS is to provide priority including dedicated bandwidth, controlled jitter and latency (required by some real-time and interactive traffic), and improved loss characteristics. Also important is making sure that providing priority for one or more flows does not make other flows fail.

QoS : Priority Queue Bandwidth Allocation Disabled

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 type="radio"/>	80

Unlimited Priority Queue: The LAN IP address will not be bounded in the QoS limitation.

High/Low Priority Queue: This can put the packets in the protocol and port range to High/Low QoS Queue.

Bandwidth Allocation:

This can reserve / limit the throughput of specific protocols and port range. You can set the upper bound and Lower bound.

Quality of Service (QoS) refers to the capability of a network to provide better service to selected network traffic. The primary goal of QoS is to provide priority including dedicated bandwidth, controlled jitter and latency (required by some real-time and interactive traffic), and improved loss characteristics. Also important is making sure that providing priority for one or more flows does not make other flows fail.

QoS : Priority Queue Bandwidth Allocation Disabled

Type :	Download
Local IP range :	<input type="text"/> ~ <input type="text"/>
Protocol :	ALL
Port range :	1 ~ 65535
Policy :	Min
Rate(bps) :	FULL

Type: Specify the direction of packets. Upload, download or both.

IP range: Specify the IP address range. You could also fill one IP address

Protocol: Specify the packet type. The default ALL will put all packets in the QoS priority Queue.

Port range: Specify the Port range. You could also fill one Port.

Policy: Specify the policy the QoS, **Min** option will reserve the selected data rate in QoS queue. **Max** option will limit the selected data rate in QoS queue.

Rate: The data rate of QoS queue.

Disabled: This could turn off QoS feature.

NAT	Port map.	Port fw.	Port tri.	ALG	UPnP	QoS	Routing
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Quality of Service (QoS) refers to the capability of a network to provide better service to selected network traffic. The primary goal of QoS is to provide priority including dedicated bandwidth, controlled jitter and latency (required by some real-time and interactive traffic), and improved loss characteristics. Also important is making sure that providing priority for one or more flows does not make other flows fail.

QoS : Priority Queue Bandwidth Allocation Disabled

- Routing

You can set enable Static Routing to let the router forward packets by your routing policy.

Enable **Routing**

You can enable Static Routing to turn off the NAT function of the router and let the router forward packets by your routing policy.

To take Static Route effect, please disable NAT function.

Enable Static Routing

Destination LAN IP:

Subnet Mask:

Default Gateway:

Hops:

Interface :

Current Static Routing Table:

NO.	Destination LAN IP	Subnet Mask	Default Gateway	Hops	Interface	Select
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Destination LAN IP: Specify the destination LAN IP address of static routing rule.

Subnet Mask: Specify the Subnet Mask of static routing rule.

Default Gateway: Specify the default gateway of static routing rule.

Hops: Specify the Max Hops number of static routing rule.

Interface: Specify the Interface of static routing rule.

5.7. TOOLS Settings

- Admin

You can change the password required to log into the Router's system web-based management. By default, the password is: admin. Passwords can contain 0 to 12 alphanumeric characters, and are case sensitive.

Admin	Time	DDNS	Power	Diagnosis	Firmware	Back-up	Reset
-------	------	------	-------	-----------	----------	---------	-------

You can change the password that you use to access the router, this is not your ISP account password.

Old Password :	<input type="text"/>
New Password :	<input type="text"/>
Repeat New Password :	<input type="text"/>

Remote management allows the router to be configured from the Internet by a web browser, A username and password is still required to access the Web-Management interface.

Host Address	port	Enable
<input type="text"/>	8080	<input type="checkbox"/>

Apply Reset

Old Password: Fill in the current password to allow changing to a new password.

New Password: Enter your new password and type it again in **Repeat New Password** for verification purposes

Remote management

This allows you to designate a host in the Internet the ability to configure the Router from a remote site. Enter the designated host IP Address in the Host IP Address field.

Host Address: This is the IP address of the host in the Internet that will have management/configuration access to the Router from a remote site. If the Host Address is left 0.0.0.0 this means anyone can access the router's web-based configuration from a remote location, providing they know the password.

Port: The port number of the remote management web interface.

Enabled: Check to enable the remote management function.

Click <**Apply**> at the bottom of the screen to save the above configurations.

The Time Zone allows your router to reference or base its time on the settings configured here, which will affect functions such as Log entries and Firewall settings.

Time Setup:

Synchronize with the NTP server

The Router reads the correct time from NTP servers on the Internet and sets its system clock accordingly. The Daylight Savings option merely advances the system clock by one hour. The time zone setting is used by the system clock when displaying the correct time in schedule and the log files.

Time Setup : Synchronize with the NTP Server

Time Zone : (GMT)Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London

NTP Time Server :

Daylight Saving : Enable
From January 1 To January 1

Apply Reset

Time Zone: Select the time zone of the country you are currently in. The router will set its time based on your selection.

NTP Time Server: The router can set up external NTP Time Server.

Daylight Savings: The router can also take Daylight Savings into account. If you wish to use this function, you must select the Daylight Savings Time period and check/tick the enable box to enable your daylight saving configuration.

Click **<Apply>** at the bottom of the screen to save the above configurations.

Synchronize with PC

You could synchronize timer with your Local PC time.

The Router reads the correct time from NTP servers on the Internet and sets its system clock accordingly. The Daylight Savings option merely advances the system clock by one hour. The time zone setting is used by the system clock when displaying the correct time in schedule and the log files.

Time Setup :	Synchronize with PC
PC Date and Time :	2008年11月18日 上午 11:37:42
Daylight Saving :	<input type="checkbox"/> Enable From January 1 To January 1

Apply Reset

PC Date and Time: This field would display the PC date and time.

Daylight Savings: The router can also take Daylight Savings into account. If you wish to use this function, you must select the Daylight Savings Time period and check/tick the enable box to enable your daylight saving configuration.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- DDNS

DDNS allows you to map the static domain name to a dynamic IP address. You must get an account, password and your static domain name from the DDNS service providers. This router supports DynDNS, TZO and other common DDNS service providers.

The screenshot shows a web interface with a navigation bar at the top containing tabs for Admin, Time, DDNS, Power, Diagnosis, Firmware, Back-up, and Reset. The DDNS tab is selected. Below the navigation bar, there is a descriptive text: "DDNS allows users to map a static domain name to a dynamic IP address. You must get an account, password and your static domain name from the DDNS service provider..". The configuration area includes a "Dynamic DNS :" label with radio buttons for "Enable" and "Disable", where "Disable" is selected. Below this are five input fields: "Server Address :" with a dropdown menu showing "3322(qdns)", "Host Name :", "Username :", and "Password :". At the bottom right of the configuration area are "Apply" and "Cancel" buttons.

Enable/Disable DDNS: Enable or disable the DDNS function of this router

Server Address: Select a DDNS service provider

Host Name: Fill in your static domain name that uses DDNS.

Username: The account that your DDNS service provider assigned to you.

Password: The password you set for the DDNS service account above

Click **<Apply>** at the bottom of the screen to save the above configurations.

- Power

Saving power in WLAN mode can be enabled / disabled in this page.



You can use the power page to save energy for WLAN interfaces.

Power Saving Mode :

WLAN : Enable Disable

- Diagnosis

This page could let you diagnosis your current network status.



This page can diagnose the current network status

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

- Firmware

This page allows you to upgrade the router's firmware. To upgrade the firmware of your Router, you need to download the firmware file to your local hard disk, and enter that file name and path in the appropriate field on this page. You can also use the Browse button to find the firmware file on your PC.

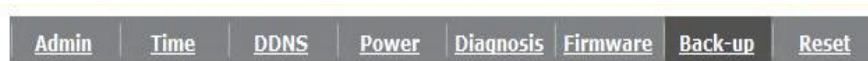


You can upgrade the firmware of the router in this page. Ensure, the firmware you want to use is on the local hard drive of your computer. Click on Browse to browse and locate the firmware to be used for your update.

Once you've selected the new firmware file, click <**Apply**> at the bottom of the screen to start the upgrade process

- Back-up

This page allows you to save the current router configurations. When you save the configurations, you also can re-load the saved configurations into the router through the **Restore Settings**. If extreme problems occur you can use the **Restore to Factory Defaults** to set all configurations to its original default settings.



Use BACKUP to save the routers current configuration to a file named config.dlf. You can use RESTORE to restore the saved configuration. Alternatively, you can use RESTORE TO FACTORY DEFAULT to force the router to restore the factory default settings.

Restore to factory default :	<input type="button" value="Reset"/>
Backup Settings :	<input type="button" value="Save"/>
Restore Settings :	<input type="text"/> <input type="button" value="Upload"/>

Backup Settings: This can save the Router current configuration to a file named "config.bin" on your PC. You can also use the **<Upload>** button to restore the saved configuration to the Router. Alternatively, you can use the "**Restore to Factory Defaults**" tool to force the Router to perform a power reset and restore the original factory settings.

- Reset

You can reset the Router when system stops responding correctly or stop functions.



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. You will be asked to confirm your decision. The reset will be completed when the LED Power light stops blinking.



6. Repeater Mode

Repeater mode has limited settings compared to the AP mode. Choose “Repeater mode” on the top right corner of the configuration page.

System restarts and connects to the IP address <http://192.168.0.1>

You will see the configuration homepage under “**REPEATER**” mode now.

The screenshot displays the configuration interface for an EnGenius ESR6650 3G Wireless Router in Repeater Mode. The interface includes a navigation menu on the left and a main content area with tabs for Status, LAN, Schedule, Event Log, Monitor, and Language. The Status page is active, showing system information and LAN settings.

EnGenius ESR6650

3G Wireless Router Repeater Mode

Status LAN Schedule Event Log Monitor Language

You can use the Status page to monitor the connection status for WLAN/LAN interfaces, firmware and hardware version numbers.

System

Model	Wireless Network Broadband Router
Mode	AP Repeater
Uptime	16 sec
Current Date/Time	2008/01/01 00:00:14
Hardware version	0.0.1
Serial Number	000000001
Kernel version	1.0.3
Application version	1.0.3

LAN Settings

IP address	192.168.0.1
------------	-------------

3G **WPS** **Antenna Upgradable** **HACKER SHIELD** **WEP** **TKIP** **AES**

6.1. System

- Status

System status section allows you to monitor the current status of your router.

You can see the Uptime, hardware information, serial number as well as firmware version information.

LAN Settings: This page displays the Router LAN port's current LAN & WLAN information.

WLAN Settings: Wireless configuration details such as SSID, Security settings, BSSID, Channel number, mode of operation are briefly shown.

- LAN

The LAN Tabs reveals LAN settings which can be altered at will. If you are an entry level user, try accessing a website from your browser. If you can access website without a glitch, just do not change any of these settings.

Click **<Apply>** at the bottom of this screen to save the changed configurations.

You can enable the Broadband routers DHCP server to dynamically allocate IP Addresses to your LAN client PCs. The broadband router must have an IP Address for the Local Area Network.

LAN IP

IP address :
IP Subnet Mask :
802.1d Spanning Tree :

Apply Cancel

IP address: It is the router’s LAN IP address (Your LAN clients default gateway IP address). It can be changed based on your own choice.

IP Subnet Mask: Specify a Subnet Mask for your LAN segment.

802.1d Spanning Tree: This is disabled by default. If 802.1d Spanning Tree function is enabled, this router will use the spanning tree protocol to prevent network loops.

- Schedule

Add schedule, edit schedule options allow configuration of power savings services. Fill in the schedule and select type of service. Click **<Apply>** to implement the settings.

You can use the Schedule page to Start/Stop the Services regularly. The Schedule will start to run, when it get GMT Time from Time Server. Please set up the Time Server correctly in Toolbox. The services will start at the time in the following Schedule Table or it will stop.

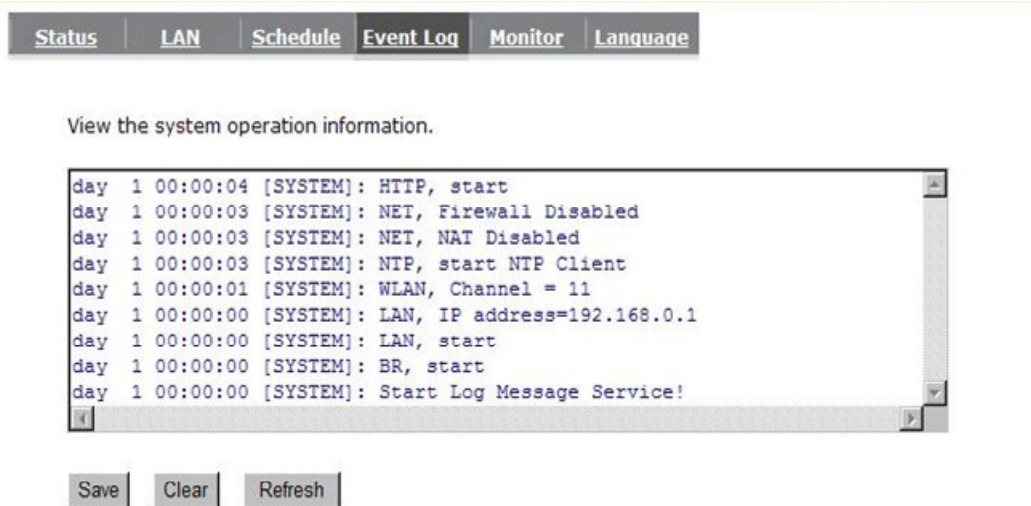
Enabled Schedule Table (up to 8)

NO.	Description	Service	Schedule	Select
1	schedule 01	Firewall	All Time---Mon, Tue, Wed, Thu, Fri, Sat, Sun	<input type="checkbox"/>

The schedule table lists the pre-schedule service-runs. You can select any of them using the check box.

- Event Log

View operation **log of ESR6650**. This page shows the current system log of the Router. It displays any event occurred after system start up. At the bottom of the page, the system log can be saved **<Save>** to a local file for further processing or the system log can be cleared **<Clear>** or it can be refreshed **<Refresh>** to get the most updated information. When the system is powered down, the system log will disappear if not saved to a local file.



View the system operation information.

```
day 1 00:00:04 [SYSTEM]: HTTP, start
day 1 00:00:03 [SYSTEM]: NET, Firewall Disabled
day 1 00:00:03 [SYSTEM]: NET, NAT Disabled
day 1 00:00:03 [SYSTEM]: NTP, start NTP Client
day 1 00:00:01 [SYSTEM]: WLAN, Channel = 11
day 1 00:00:00 [SYSTEM]: LAN, IP address=192.168.0.1
day 1 00:00:00 [SYSTEM]: LAN, start
day 1 00:00:00 [SYSTEM]: BR, start
day 1 00:00:00 [SYSTEM]: Start Log Message Service!
```

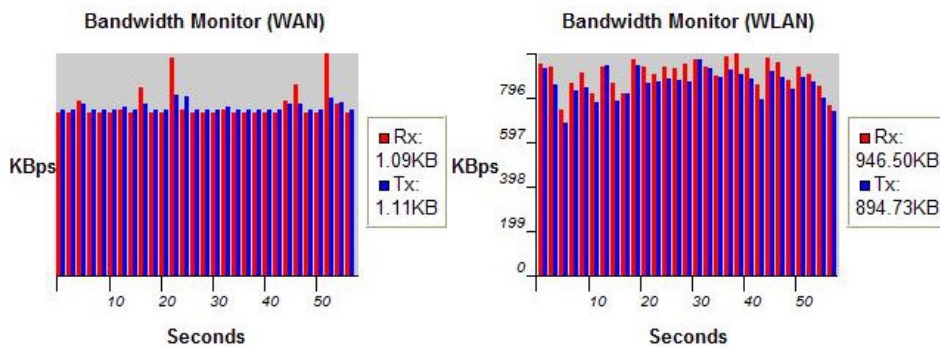
Save Clear Refresh

- Monitor

Show the network packets histogram for network connection on WAN, LAN & WLAN. Auto refresh keeps information updated frequently.



You can monitor the bandwidth in different interface. This page will refresh in every five seconds.



- Language

This Wireless Router support multiple language of web pages, you could select your native language here.



You can select other language in this page.

Multiple Language :

6.2. Wireless

-Basic

You can set parameters that are used for the wireless stations to connect to this router. The parameters include Mode, ESSID, Channel Number and Associated Client.

The screenshot shows a web interface for configuring wireless settings. At the top, there are three tabs: 'Basic', 'Client List', and 'Policy'. Below the tabs is a descriptive paragraph: 'This page allows you to define SSID, and Channel for the wireless connection. These parameters are used for the wireless stations to connect to the Access Point.' The configuration fields are as follows:

- Radio :** A checkbox labeled 'Enable' is selected, and 'Disable' is unselected.
- Mode :** A dropdown menu is set to 'Repeater'.
- Band :** A dropdown menu is set to '2.4 GHz (B+G+N)'.
- Enabled SSID#:** A dropdown menu is set to '1'.
- SSID1 :** A text input field contains 'EnGeniusCCDD10'.
- Site Survey :** A button labeled 'Site Survey' is visible.

Below these fields is a section titled 'Wireless Information' with the following details:

- SSID:** EnGeniusCCDD10
- Status:** Disconnected
- Channel:** (The field is present but empty in the screenshot)

Radio: Enable or Disable Wireless function

Band: Allows you to set the AP fixed at 802.11b, 802.11g or 802.11n mode. You can also select B+G mode to allow 802.11b and 802.11g clients at the same time.

Enable ESSID: You can specify the maximum ESSID number.

ESSID1~3: Allow you to specify ESSID of WLAN.

Site Survey: You can scan the current Wireless Access Point and connect on it.

Site Survey

NO.	Select	Channel	SSID	BSSID	Encryption	Auth	Signal (%)	Mode
1	<input type="radio"/>	1	ADSL_1	00:02:6f:4c:64:a0	AES	WPA2PSK	50	11b/g/n
2	<input type="radio"/>	3	ADSL_2	00:02:6f:48:0d:8b	WEP	OPEN	100	11b/g
3	<input type="radio"/>	9	ADSL_3	00:16:b6:28:07:34	NONE	OPEN	65	11b/g

-Client List

This WLAN Client Table shows the Wireless client associate to this Wireless Router.

Basic **Client List** Policy

WLAN Client Table :

This WLAN Client Table shows client MAC address associate to this Broadband Router

Interface	MAC address	Signal (%)	Idle Time
EnGeniusCCDD10	00:0C:43:28:70:00	100	3 secs

-Policy

The Router can allow you to set up the Wireless Access Policy.

Communication between Wireless clients:

Allow Wireless Client to communicate with other Wireless Client on specific SSID.

Communication between Wireless clients and wired clients:

Allow Wireless Client to communicate with other Wireless Client on specific SSID and Wired Client on the switch.

Basic	Client List	Policy
-------	-------------	--------

SSID 1 Connection Control Policy	
Communication between Wireless clients	Enable ▾
Communication between Wireless clients and Wired clients	Enable ▾

6.3. Tools

- Admin

You can change the password required to log into the Router's system web-based management. By default, the password is: admin. Passwords can contain 0 to 12 alphanumeric characters, and are case sensitive.

Admin	Time	Power	Diagnosis	Firmware	Back-up	Reset
--------------	-------------	--------------	------------------	-----------------	----------------	--------------

You can change the password that you use to access the router, this is not your ISP account password.

Old Password :	<input type="text"/>
New Password :	<input type="text"/>
Repeat New Password :	<input type="text"/>

Remote management allows the router to be configured from the Internet by a web browser, A username and password is still required to access the Web-Management interface.

Host Address	port	Enable
<input type="text"/>	8080	<input type="checkbox"/>

Old Password: Fill in the current password to allow changing to a new password.

New Password: Enter your new password and in **Repeat New Password** for verification purposes

Click **<Apply>** at the bottom of the screen to save the above configurations

Remote management

This allows you to designate a host in the Internet the ability to configure the Router from a remote site. Enter the designated host IP Address in the Host IP Address field.

Host Address: This is the IP address of the host in the Internet that will have management/configuration access to the Router from a remote site. If the Host Address is left 0.0.0.0 this means anyone can access the router's web-based configuration from a remote location, providing they know the password.

Port: The port number of the remote management web interface.

Enabled: Check to enable the remote management function.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- Time

The Time Zone allows your router to reference or base its time on the settings configured here, which will affect functions such as Event Log entries and Schedule settings.

Time Setup:

Synchronize with the NTP server

Admin	Time	Power	Diagnosis	Firmware	Back-up	Reset
--------------	-------------	--------------	------------------	-----------------	----------------	--------------

The Router reads the correct time from NTP servers on the Internet and sets its system clock accordingly. The Daylight Savings option merely advances the system clock by one hour. The time zone setting is used by the system clock when displaying the correct time in schedule and the log files.

Time Setup :	Synchronize with the NTP Server
Time Zone :	(GMT)Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
NTP Time Server :	
Daylight Saving :	<input type="checkbox"/> Enable From January 1 To January 1

Apply Reset

Time Zone: Select the time zone of the country you are currently in. The router will set its time based on your selection.

NTP Time Server: This accept local the IP Address of Local NTP Time Server Address.

Daylight Savings: The router can also take Daylight Savings into account. If you wish to use this function, you must select the Daylight Savings Time period and check/tick the enable box to enable your daylight saving configuration.

Click <Apply> at the bottom of the screen to save the above configurations

Synchronize with PC

You could synchronize timer with your Local PC time.

The Router reads the correct time from NTP servers on the Internet and sets its system clock accordingly. The Daylight Savings option merely advances the system clock by one hour. The time zone setting is used by the system clock when displaying the correct time in schedule and the log files.

Time Setup :	Synchronize with PC
PC Date and Time :	2008年11月18日 上午 11:49:33
Daylight Saving :	<input type="checkbox"/> Enable From January 1 To January 1

Apply Reset

PC Date and Time: This field would display the PC date and time.

Daylight Savings: The router can also take Daylight Savings into account. If you wish to use this function, you must select the Daylight Savings Time period and check/tick the enable box to enable your daylight saving configuration.

Click **<Apply>** at the bottom of the screen to save the above configurations.

- Power

Saving power in WLAN mode can be enabled / disabled in this page.



You can use the power page to save energy for WLAN interfaces.

Power Saving Mode :

WLAN : Enable Disable



- Diagnosis

This page could let you diagnosis your current network status.



This page can diagnose the current network status

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

- Firmware

This page allows you to upgrade the router's firmware. To upgrade the firmware of your Router, you need to download the firmware file to your local hard disk, and enter that file name and path in the appropriate field on this page. You can also use the Browse button to find the firmware file on your PC.

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.

 瀏覽...

Once you've selected the new firmware file, click <**Apply**> at the bottom of the screen to start the upgrade process

- Back-up

The page allows you to save (Backup) the router's current configuration settings. When you save the configuration setting (Backup) you can re-load the saved configuration into the router through the **Restore selection**. If extreme problems occur you can use the **Restore to Factory Defaults** selection, this will set all configurations to its original default settings (e.g. when you first purchased the router).



Use BACKUP to save the routers current configuration to a file named config.dlf. You can use RESTORE to restore the saved configuration. Alternatively, you can use RESTORE TO FACTORY DEFAULT to force the router to restore the factory default settings.

Restore to factory default :	<input type="button" value="Reset"/>
Backup Settings :	<input type="button" value="Save"/>
Restore Settings :	<input type="text"/> <input type="button" value="瀏覽..."/>
	<input type="button" value="Upload"/>

Backup Settings: This can save the Router current configuration to a file named "**config.bin**" on your PC. You can also use the **<Upload>** button to restore the saved configuration to the Router. Alternatively, you can use the "**Restore to Factory Defaults**" to force the Router to perform a power reset and restore the original factory settings.

- Reset

You can reset the Router when system stops responding correctly or stop functions.

Admin	Time	Power	Diagnosis	Firmware	Back-up	Reset
-----------------------	----------------------	-----------------------	---------------------------	--------------------------	-------------------------	-----------------------

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. You will be asked to confirm your decision. The reset will be completed when the LED Power light stops blinking.

Appendix A – FCC Interference Statement

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.

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC 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.

We declare that the product is limited in CH1–CH11 by specified firmware controlled in the USA.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Appendix B – IC Interference Statement

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.

IMPORTANT NOTE:

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.

This device has been designed to operate with an antenna having a maximum gain of 2 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.