



Shaw Business

Hitron Modem (CGNM-2250)
Configuration User Guide

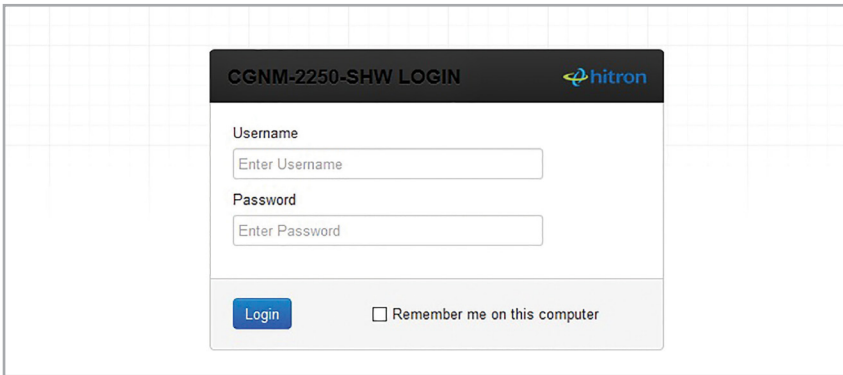
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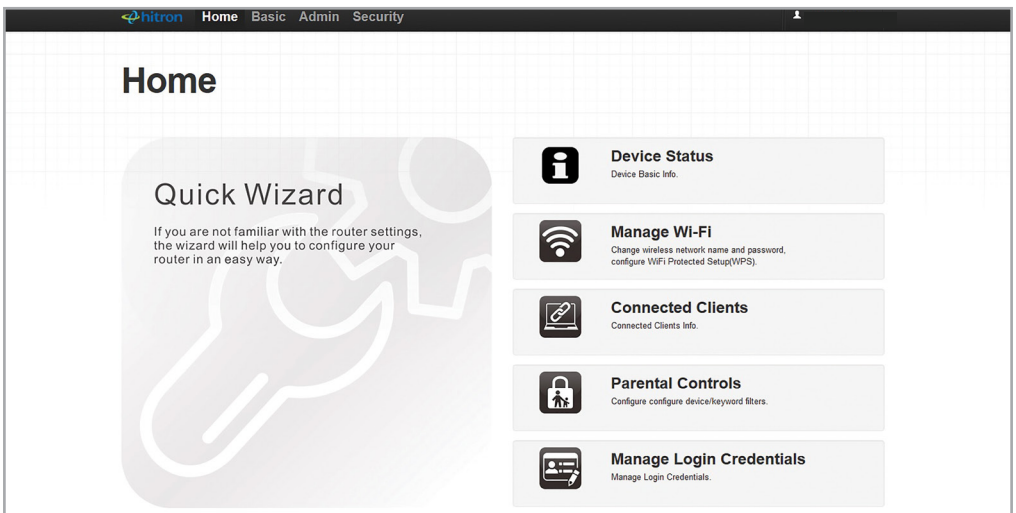
1. How to Login to your Hitron Modem

To access the configuration settings for the Hitron modem, first connect your modem directly to your computer with an Ethernet cable. Then follow these steps:

1. Open an Internet browser (Internet Explorer, FireFox, Chrome, Safari) on your computer.
2. Enter the following into the address bar: **http://192.168.0.1**
3. Press the **ENTER** key on your keyboard.
4. You will then be taken to the Hitron Advanced WiFi modem's sign in page where you can sign in with the following information:
 - Username: **cusadmin**
 - Password: This is listed as the "WiFi Key" on front of your Hitron Modem
5. Click **Login**

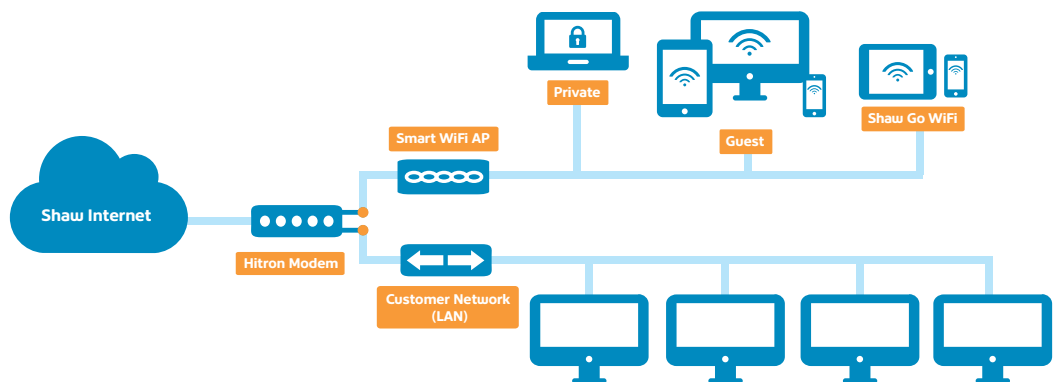


The following screenshot is what you will see upon login to the Hitron Modem user portal. The setting options you will select from are either at the top or on the right of the portal page.



2. SmartWiFi and LAN set up

The diagram below illustrates the network topology for SmartWiFi:



The SmartWiFi access points (the APs that broadcast the Private, Guest and Shaw Go WiFi SSID's) connect directly to the Hitron Modem. The customer Local Area Network (LAN) connects here as well.

The following sections indicate how to set up the different Gateway/router functions of the Hitron Modem in order to interact properly with your LAN.

a. LAN Setting -Private Gateway IP and Dynamic Host Configuration Protocol (DHCP)

These settings will allow you to configure the Gateway IP and DHCP settings when you prefer a different IP subnet on your LAN other than 192.168.0.x, or wish to limit the IP range that is available in the dynamic pool (the available IPs that can be assigned to a device). For example, you can set the dynamic pool to start at 192.168.0.100 and end at 192.168.0.255. Which reserves 192.168.0.2 – 192.168.0.99 available for static assignment within the LAN. You can assign specific reserved IP addresses to a specific device such as printer, server, backup drive, computer, etc.

Note: The IP range can be changed if needed.

To adjust these LAN configuration settings:

1. In a browser window, log in to the Hitron Modem user portal. See [section 1](#) for details. The default is `http://192.168.0.1`
2. From the top navigation bar, click **Basic** then **LAN Setup**.
3. Input IP Address into **Private LAN IP Address** text field.
 - a. The IP Address entered will be the new Gateway IP Address for Graphical User Interface (GUI) logins.
4. Input Subnet Mask into **Subnet Mask** text field.
 - a. The Subnet Mask entered will define the DHCP scope the Hitron will use to offer IP addresses to clients. (most setups will simply use 255.255.255.0)
5. Confirm that **LAN DHCP Status** is **Enabled**.
6. Select desired **DHCP Lease Time** with the drop down menu. This specifies how long the IP address can be leased before it resets.
7. Input IP Address into **DHCP Start IP** text field. This defines the first available LAN IP Address that will be assigned by DHCP to clients.
8. Input IP Address into **DHCP End IP** text field. This defines the last available LAN IP Address that will be assigned by DHCP to clients.
9. Click **Save Changes** to save the new changes you have made.

The screenshot shows the Hitron Basic Settings page. The top navigation bar includes Home, Basic, Admin, and Security. The Basic Settings section is active, and the LAN Setup tab is selected. The Private LAN Setting section contains the following fields:

- Private LAN IP Address: 192.168.0.1
- Subnet Mask: 255.255.255.0
- LAN DHCP Status: Enabled (Selected), Disabled, DHCP Reservation
- DHCP Lease Time: 1 Week
- DHCP Start IP: 192.168.0.10
- DHCP End IP: 192.168.0.200
- UPNP: Enabled, Disabled

At the bottom, there are buttons for Save Changes, Cancel, and Help.

b. Static DHCP Assignment – Add, Remove, View

Through DHCP, the Hitron Modem automatically provides IP addresses to devices when they connect to the network.

Using the Static DHCP assignment, you can ensure that a device connecting to the network gets the same IP address every time without having to hardcode that IP on the device. This is useful for things like your printer, a server, a backup drive or a computer where the IP address needs to be constant for easy accessibility.

To add or view a DHCP Reservation, follow these steps:

- 1. Access the DHCP Reservation Screen
 - a. In a browser window, log in to the Hitron Modem user portal.
See section 1 for details. The default is http://192.168.0.1
 - b. At the top of the page, click **Basic** then **LAN Setup**.
 - c. Click **DHCP Reservation**.

Basic Settings

This menu show the basic settings of the device

LAN Setup

WAN Setup

Gateway Function

Port Forwarding

Port Triggering

DMZ

DNS

Private LAN Setting

Private LAN IP Address	192.168.0.1
Subnet Mask	255.255.255.0
LAN DHCP Status	Enabled Disabled DHCP Reservation

2. Add a DHCP Reservation

Once you click on **DHCP Reservation**, the following window will pop up. You will then have two options to add a DCP Reservation:

Basic Settings

This menu show the basic settings

LAN Setup WAN Setup Gate

Private LAN Setting

Private LAN IP Address

Subnet Mask

LAN DHCP Status

DHCP Lease Time

DHCP Start IP

DHCP End IP

UPNP

DHCP Reservation

Clients from DHCP Tables Refresh

Client Name	IP Address	MAC Address	Add
CGL152374	192.168.0.10	DC:4A:3E:62:A9:C2	Add

Manually Add Client

Enter Client Name	Assign IP address	To this MAC address	Add
Client Name	IP Address	MAC Address	Add

Client Already Reserved

Client Name	Assign IP address	To this MAC address	Action
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Save Changes Close

a. Adding DHCP Reservation from DHCP Table

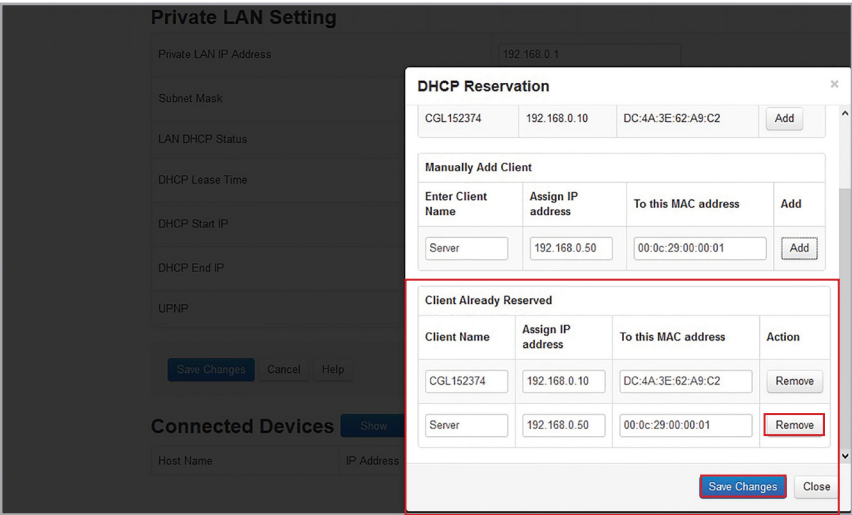
- Within the top section, **Clients from DHCP Tables**, locate the client name within in the list provided.
 - If your client is not in the list provided, click **Refresh**.
- Click **Add**, to add the reservation.
- You should now see the client listed under **Client Already Reserved**.
- Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes.

b. Manually adding DHCP Reservation

- Within the second section, **Manually Add Client**, input desired client name into the **Enter Client Name** text field.
- Input IP Address into the **Assign IP Address** text field.
- Input MAC Address into the **To this MAC Address** text field.
- Click **Add**.
- You should now see the client listed under **"Client Already Reserved."**
- Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes.

3. To remove a DHCP Reservation, follow these steps:

- 1. Within the bottom section, **Client Already Reserved**, locate the target client you wish to remove.
- 2. Click **Remove**.
- 3. You should no longer see the client listed under **Client Already Reserved**.
- 4. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes.



3. Basic Setup of the Hitron Modem

a. Setting Public Static IP on Gateway of the Hitron Modem

This will be needed when you request a static IP address from Shaw Business. To request this, please call the Shaw Business Technical Support team at 1-877-742-9249. Once this is requested, you will receive an email with details for configuring the settings in your Hitron Modem.

Static IPs are most commonly used for running internet facing servers. If you assign a static IP address to the Hitron Modem's gateway, you will need to use port forwarding or a demilitarized zone (DMZ) to pass data from the static IP address to your server(s).

Static IP Configuration requires 2 steps, making changes to the WAN and then to the Domain Name System (DNS) screen. *Please Note: Though there will be overlap between some fields in the WAN and DNS screens, it is very important that changes be made in both sections.*

To make adjustments to the WAN and DNS screen, follow these steps:

1. Configuring the WAN screen

- a. In a browser window, log in to the Hitron Modem user portal. See [section 1](#) for details. The default is <http://192.168.0.1>
- b. At the top, click **Basic** then on the **WAN Setup** tab.
- c. For **Assign WAN IP Automatically(DHCP)**, click **Disabled**.
- d. Input IP Address into the **WAN IP Address** text field.
- e. Input Subnet Mask into the **Subnet Mask** text field.
- f. Input IP Address into the **Gateway IP Address** text field. A gateway is a device on a computer network, a key stopping point for data on its way to or from the Internet. It routes traffic from a workstation to the outside network that is serving up the web pages.
- g. Input IP Address into the **Primary DNS Server** text field.
- h. Input IP Address into the **Secondary DNS Server** text field.
- i. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes.

The screenshot shows the 'Basic Settings' page of a Hitron modem. The 'Basic' tab is selected in the top navigation bar. Below it, the 'WAN Setup' sub-tab is active. The 'Wan Information' section contains several fields: 'Assign WAN IP Automatically(DHCP)' with a toggle set to 'Disabled', 'WAN IP Address' (192.144.12.47), 'Subnet Mask' (255.255.252.0), 'Gateway IP Address' (192.144.12.1), 'Primary DNS Server' (64.59.135.145), and 'Secondary DNS Server' (64.59.128.114). At the bottom are 'Save Changes', 'Cancel', and 'Help' buttons. Callouts a-i point to specific elements: a points to the 'Basic' tab, b to the 'WAN Setup' sub-tab, c to the DHCP toggle, d to the WAN IP Address field, e to the Subnet Mask field, f to the Gateway IP Address field, g to the Primary DNS Server field, h to the Secondary DNS Server field, and i to the 'Save Changes' button.

Field	Value
Assign WAN IP Automatically(DHCP)	Disabled
WAN IP Address	192.144.12.47
Subnet Mask	255.255.252.0
Gateway IP Address	192.144.12.1
Primary DNS Server	64.59.135.145
Secondary DNS Server	64.59.128.114

2. Configuring the Domain Name System (DNS) screen
 - a. At the top navigation bar, click **Basic** then on the **DNS** tab.
 - b. For **DNS Obtain**, click **Manual**.
 - c. Input IP Address into the **DNS1** text field.
 - d. Input IP Address into the **DNS2** text field.
 - e. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes.

Note: IP Addresses for DNS1 and DNS2 must match the IP Addresses entered in the previous section (Primary DNS Server, Secondary DNS Server).

The screenshot shows the Hitron Basic Settings interface. The top navigation bar includes Home, Basic, Admin, and Security. The Basic Settings menu is open, showing tabs for LAN Setup, WAN Setup, Gateway Function, Port Forwarding, Port Triggering, DMZ, and DNS. The DNS tab is selected. The DNS Settings section is titled 'Configure your DNS settings'. It includes a 'DNS Obtain' section with 'Auto' and 'Manual' buttons, where 'Manual' is selected. Below this are two text input fields for 'DNS1' and 'DNS2'. At the bottom of the form are three buttons: 'Save Changes', 'Cancel', and 'Help'.

b. How to reset default settings of the Hitron Modem

If you need to restore your modem to default settings, you can do so by performing a pin-hole reset. To do this, locate the pin-hole reset button on the back of your modem and then push and hold it down with a paperclip or pen for five to ten seconds. If completed successfully, the lights on the modem will begin to flash and the modem will take approximately two minutes to reset.



Please Note: This reset will delete all of your custom configurations, including any changes you made to your SSID, network password and wireless channel settings.

4. 3rd Party Device Setup

SmartWiFi installations come pre-configured with 3 WiFi networks or SSIDs:

- Private (typically named after your business name);
- Guest (typically named after your business name, with guest added at the end); and
- Shaw Go WiFi

SmartWiFi can allow seamless communication between devices connected directly into the Hitron Modem and to devices that are connected to the Private SSID. Connected devices would include wired/wireless printers, Chromecast devices, Apple TVs, etc.

As the Hitron Modem acts as the DHCP server, it will serve IPs to devices connected to the Private SSID and also to devices plugged into the wired Hitron ports. This will allow devices connected to the wired ports to communicate to devices connected to the Private SSID and vice versa. It will also allow wireless devices connected to the Private SSID to communicate with each other.

When connecting a 3rd party device into your Private business network, please keep in mind:

- Installing a 3rd party router will break communication between wired devices and devices connected to the Private SSID. The Hitron Modem must be the sole DHCP server and gateway for both the wired LAN and wireless SSID.
- Devices connected to the Guest SSID cannot communicate with any other devices connected to the Guest SSID (or to any devices connected to the other 2 SSIDs).
- Devices connected to Shaw Go WiFi SSID cannot communicate with any other devices connected to Shaw Go WiFi (or to any devices connected to the other 2 SSIDs).

NOTE: If your device, for example, your smartphone, has previously connected to both Shaw Go WiFi and your Private SSID, it may automatically connect to Shaw Go WiFi at your business, even though you would like it to connect to your Private SSID. To rectify this, you should prioritize your Private SSID over Shaw Go WiFi if possible. If this is not possible, you may need to forget the Shaw Go WiFi SSID on your device so that it won't inadvertently hop between SSIDs.

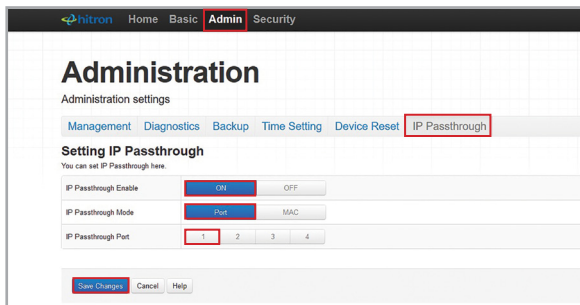
5. Advanced Setup

a. Port Based IP Passthrough

Enabling Port based IP Passthrough allows one or more ports on the Hitron Modem to bypass the Hitron DHCP. This would allow any device connected to a specific port to receive an external public IP.

To configure the Port based IP Passthrough settings, follow these steps:

1. In a browser window, log in to the Hitron Modem user portal. See section 1 for details. The default is <http://192.168.0.1>
2. At the top of the navigation bar, click **Admin** then **IP Passthrough**.
3. For **IP Passthrough Enable**, click **ON**.
4. For **IP Passthrough Mode**, click **Port**.
5. Select desired port for **IP Passthrough Port**.
6. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes. The router will reset and you may need to wait a few minutes for connectivity to restore.



b. MAC Based IP Passthrough

Media Access Control address (MAC address) of a computer is a unique identifier assigned to network interfaces for communications. MAC addresses are used as a network address for most IEEE 802 network technologies, including Ethernet and WiFi.

Enabling MAC based IP Passthrough allows a device on the network to obtain a public IP address based on its MAC address.

To configure the MAC based IP Passthrough settings, follow these steps:

1. In a browser window, log in to the Hitron Modem user portal. See section 1 for details. The default is <http://192.168.0.1>
2. At the top of the navigation bar, click **Admin** and then on the **IP Passthrough** tab.
3. Click **ON** for **IP Passthrough Enable**.
4. Click **MAC** for **IP Passthrough Mode**.
5. Input MAC Address into the **IP Passthrough MAC** text field.
6. Click the + Icon to add an additional MAC address. Repeat Steps 5 – 6 for each additional MAC Address.

- Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes. The router will reset and you may need to wait a few minutes for connectivity to restore.

The screenshot shows the 'Administration' page in the Hitron user interface. The navigation bar at the top includes 'Home', 'Basic', 'Admin', and 'Security', with 'Admin' highlighted. The main heading is 'Administration'. Below it, there are tabs for 'Management', 'Diagnostics', 'Backup', 'Time Setting', 'Device Reset', and 'IP Passthrough', with 'IP Passthrough' selected. The section is titled 'Setting IP Passthrough' with a sub-note 'You can set IP Passthrough here.' The settings include: 'IP Passthrough Enable' with 'ON' selected; 'IP Passthrough Mode' with 'MAC' selected; and 'IP Passthrough MAC' with a text input field containing 'Enter the MAC address'. At the bottom are 'Save Changes', 'Cancel', and 'Help' buttons.

c. Port Forwarding

Port forwarding allows traffic or communication flow requests from a specific port(s) associated with an IP address of a host to be directed to a specific destination (IP address) on the internal network. For example, a security camera which uses port 56000. First, perform a DHCP reservation (please refer to the section 2a above, [LAN Setting - Private Gateway IP and Dynamic Host Configuration Protocol \(DHCP\)](#) and assign a static internal IP for the security camera (ex. 192.168.0.210). Then, forward port 56000 to 192.168.0.210. The Hitron will direct any traffic from a public IP address and port 56000 to the destination that was set (in this case 192.168.0.210).

To enable or disable Port Forwarding, follow these steps:

- In a browser window, log in to the Hitron Modem user portal. See section 1 for details. The default is `http://192.168.0.1`
- At the top of the navigation bar, click Basic and then on the **Port Forwarding** tab.
- Click **Enabled** under **All Port Forwarding Rules** to Enable Port Forwarding.
 - To Disable Port Forwarding, click **Disabled**.
- Under **Port Forwarding Rules**, click **ON** or **OFF** to enable or disable individual port forwarding rules.
- Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes. The router will reset and you may need to wait a few minutes for connectivity to restore.

The screenshot shows the 'Basic Settings' page in the Hitron user interface. The navigation bar at the top includes 'Home', 'Basic', 'Admin', and 'Security', with 'Basic' highlighted. The main heading is 'Basic Settings' with a sub-note 'This menu show the basic settings of the device'. Below it, there are tabs for 'LAN Setup', 'WAN Setup', 'Gateway Function', 'Port Forwarding', 'Port Triggering', 'DMZ', and 'DNS', with 'Port Forwarding' selected. The section is titled 'Port Forwarding Options'. Under 'All Port Forwarding Rules', 'Enabled' is selected. Below this is a table for 'Port Forwarding Rules'.

Application Name	Public	Private	Protocol	Local IP Address	Remote IP Address	Status	Manage	Action
SSH	22-22	22-22	TCP/UDP	192.168.0.10	Any	ON OFF	Manage	Remove

At the bottom are 'Add Rule', 'Save Changes', and 'Help' buttons.

i. Add a Port Forwarding Rule

Adding a port forwarding rule requires 2 steps:

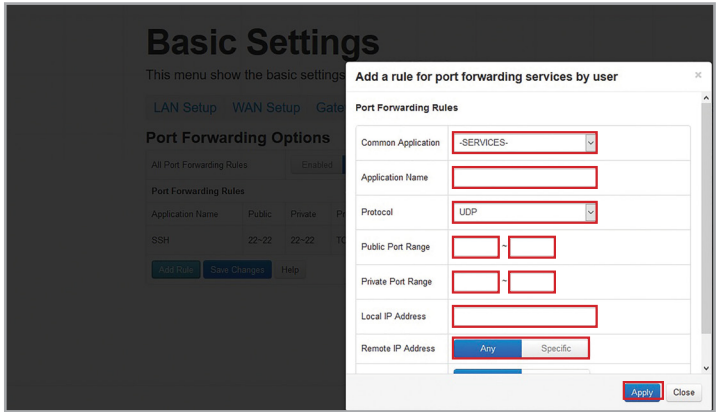
1. Add a Rule

- a. In a browser window, log in to the Hitron Modem user portal. See section 1 for details. The default is `http://192.168.0.1`
- b. At the top of the navigation bar, click **Basic** and then on the **Port Forwarding** tab.
- c. Click **Add Rule**.



2. Create a Rule

- a. A box will pop up. Under the **Common Application** section, you can select in the drop down menu predefined port forward rules for common applications.
- b. Input or Edit the **Application Name** text field.
- c. Select desired **Protocol** with the drop down menu.
- d. Input Port Numbers into the **Public Port Range** text field.
- e. Input Port Numbers into the **Private Port Range** text field.
- f. Input IP Address into Local **IP Address** text field. This Local IP must be in the same LAN IP Address Subnet.
- g. Select **Any** or **Specific** under **Remote IP Address**.
 - a. If Specific is selected, input a Public IP Range into the fields, ie. 68.59.141.110 – 68.59.141.110
- h. Click **Apply**.
- i. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes. The router will reset and you may need to wait a few minutes for connectivity to restore.

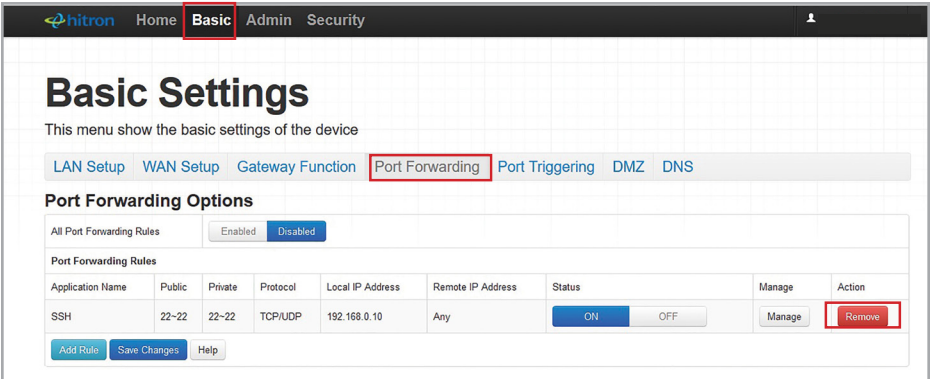


ii. Edit/Remove a Port Forwarding Rule

Deleting a port forwarding rule requires you to simply click **Remove** next to the rule to delete.

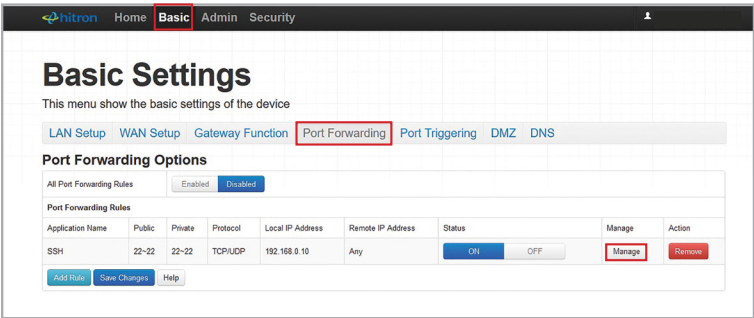
To edit a port forwarding rule, there are two options:

1. To remove the rule
 - a. In a browser window, login to the Hitron Modem user portal. See section 1 above for details. The default is `http://192.168.0.1`
 - b. At the top of the navigation bar, click **Basic** and then on the **Port Forwarding** tab.
 - c. Click **Remove** for the appropriate port forwarding rule.
 - d. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes. The router will reset and you may need to wait a few minutes for connectivity to restore.



2. Modify the rule

- a. In a browser window, login to the Hitron Modem user portal. See section 1 above for details. The default is <http://192.168.0.1>
- b. At the top of the navigation bar, click **Basic** and then on the **Port Forwarding** tab.
- c. To Edit a Rule, click **Manage** for the appropriate port forwarding rule.
- d. Modify the required parameters, similar to when the rule was initially created.
For information on adjustable parameters, see the the section above, i. [Add a Port Forwarding Rule](#).
- e. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes. The router will reset and you may need to wait a few minutes for connectivity to restore.



d. The Demilitarized Zone (DMZ)

The DMZ will allow you to forward all traffic from the IP of the Hitron Modem’s gateway to a specific machine behind the modem. The DMZ network is where all internet facing servers in your network should be housed. Examples of such servers include a website you host from a webserver in your business or your email server. The DMZ separates these Internet facing servers away from your LAN.

- i. To specify a device as a DMZ host, follow these steps:
 - 1. In a browser window, log in to the Hitron Modem user portal. See [section 1: How to Login to your Hitron Modem](#) for details. The default is <http://192.168.0.1>
 - 2. At the top of the navigation bar, click **Basic** and then on the **DMZ** tab.
 - 3. Click **Enabled** for **Enable DMZ**.
 - 4. Input the IP Address into the **DMZ Host** text field.
 - 5. Alternatively, you can click **Connected Devices** and select a currently connected host.
 - 6. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes. The router will reset and you may need to wait a few minutes for connectivity to restore.

hitron Home **Basic** Admin Security

Basic Settings

This menu show the basic settings of the device

LAN Setup WAN Setup Gateway Function Port Forwarding Port Triggering **DMZ** DNS

DMZ Settings

Enable DMZ	Enabled Disabled
DMZ Host	Connected Devices

Save Changes Cancel Help

ii. To disable or modify the DMZ host, follow these steps:

1. In a browser window, login to the Hitron Modem user portal. See [section 1: How to Login to your Hitron Modem](#) above for details. The default is http://192.168.0.1
2. At the top of the navigation bar, click **Basic** and then on the **DMZ** tab.
3. Now, you have two options:
 - a. To modify the DMZ host, input new IP Address into the **DMZ Host** text field. Alternatively, you can click **Connected Devices** select a new currently connected host.
 - b. To disable the DMZ host, click **Disabled** for **Enable DMZ**.
4. Click **Save Changes**. You will see a warning prompt, read the warning prompt and click **OK** to make the changes. The router will reset and you may need to wait a few minutes for connectivity to restore.

hitron Home **Basic** Admin Security

Basic Settings

This menu show the basic settings of the device

LAN Setup WAN Setup Gateway Function Port Forwarding Port Triggering **DMZ** DNS

DMZ Settings

Enable DMZ	Enabled Disabled
DMZ Host	Connected Devices

Save Changes Cancel Help



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