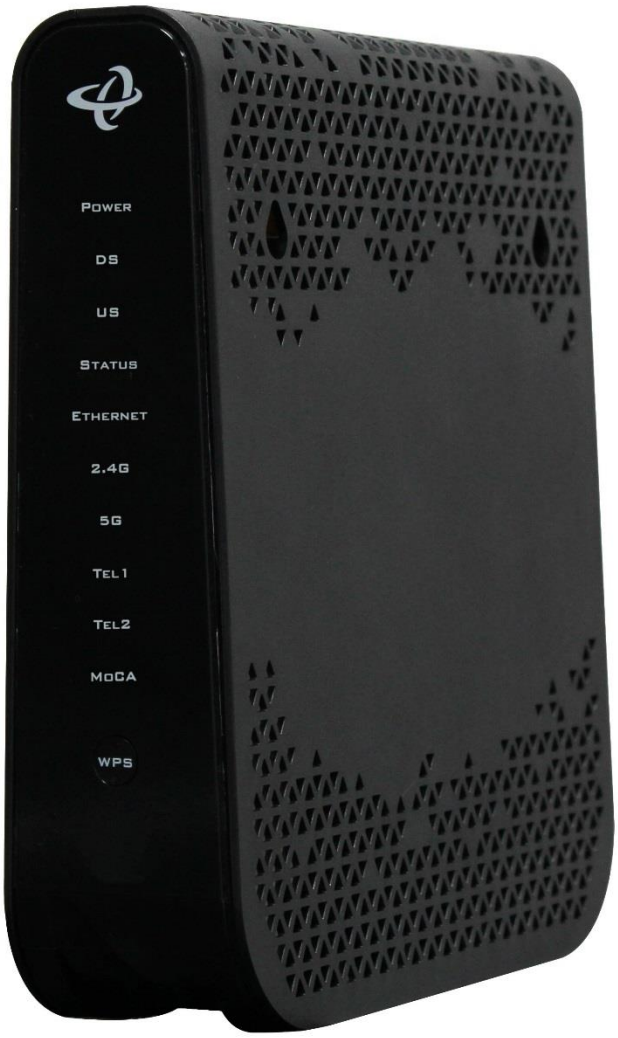
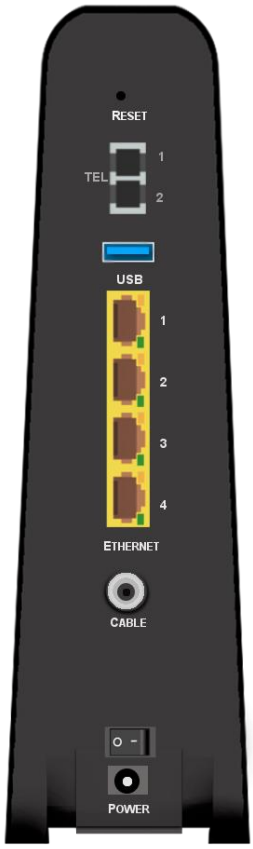
# UPC BUSINESS INTERNET DHCP

# CHITA MODEM



## Contents

# 1 Ports and Displays




**RESET:** Restart (5s) or Reset the modem (10s)

**TEL:** Ports inactive

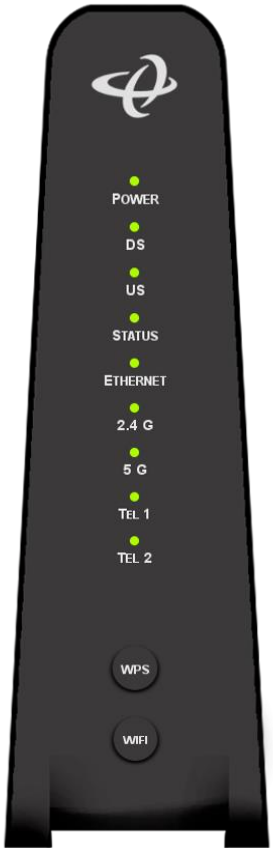
**USB:** For UPC Business Mobile backup (optional)

**LAN:** Ports for clients, SIP telephones or network components

**COAX:** Port for the broadband connection cable

**ON/OFF:** Power switch

**POWER:** Power supply




**Power**

**Downstream**

**Upstream**

**Online connection**

**Router/LAN**

**WIRELESS 2.4 GHz**

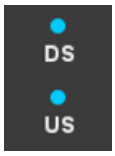
**WIRELESS 5 GHz**

**TEL:** Inaktive

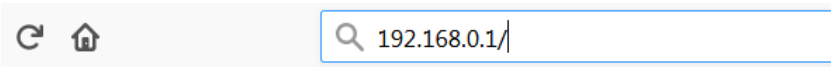
**WPS**

**WIFI:** ON/OFF (10s)

## 1.1 LED Status

| LED | Status | Description |
|---|---|---|
|   | Green – blinking | The modem is starting up. Searching for an upstream and downstream. (The process may take up to 30 minutes during the initial installation.) |
|   | Blue – steady | The modem has located upstream and downstream channels. |
|   | Green – blinking<br>Green – steady | Establishing a connection to the internet.<br>Connection to the internet has been made. |
|   | Green – steady | There is a LAN connection. |

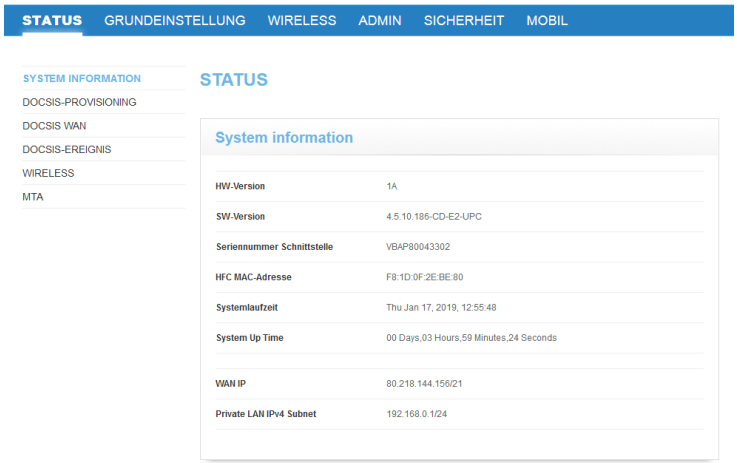
# 2 Login: Modem




Internet Browser: 192.168.0.1

Username & Passwort from Modem

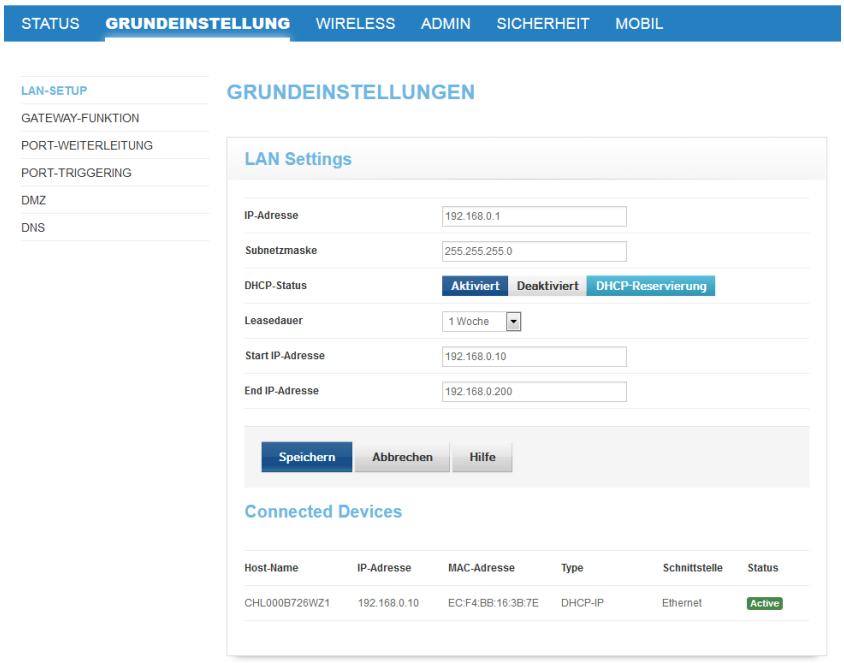
# 3 Status




# 4 Basic Settings

## 4.1 LAN Setup

The LAN setup section contains the IP address details that the gateway distributes to your local network or to the devices connected to your gateway.

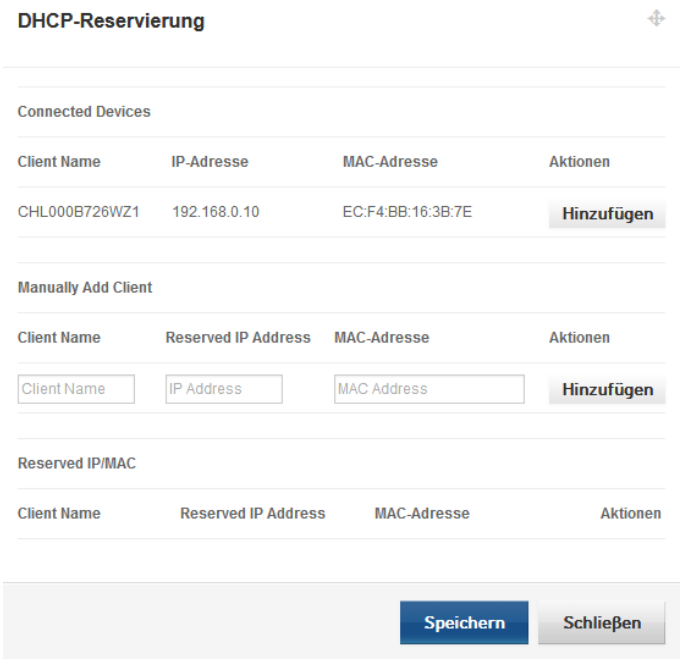


IP-Address: The IP address is the LAN IP address of the gateway. Devices connected to your broadband service require DHCP IP addresses that belong to the same subnet as the private LAN IP address of your broadband service.

Subnet mask: This field defines the size of the LAN subnet used by the DHCP server of your services for private LAN addressing.

Buttons for the activation/deactivation of LAN DHCP: Use these buttons to activate/deactivate the DHCP server function for private LAN IP addresses. When the DHCP server is activated, LAN IP addresses and DNS information are assigned to the devices.

DHCP reservation button: Clicking this button opens a pop-up window in which IP addresses for specific devices can be permanently assigned.



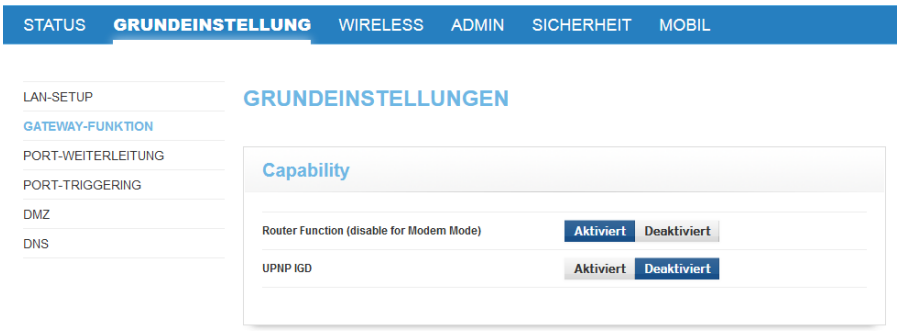

Lease time: This is the IP lease time assigned by the LAN DHCP. The specification defines how long a certain IP address is reserved for a client. The client must report to the server again before then and apply for an "extension". If the client does not respond, the address will become free and can be reassigned to another (or the same) client.

DHCP Start IP Displays the first available LAN IP address assigned by the LAN DHCP.

DHCP End IP: Displays the last available LAN IP address which is assigned by the LAN DHCP. The number of IP addresses between the DHCP start IP and the DHCP end IP determines the size of the DHCP IP address pool.

## 4.2 Gateway Function (Bridge)

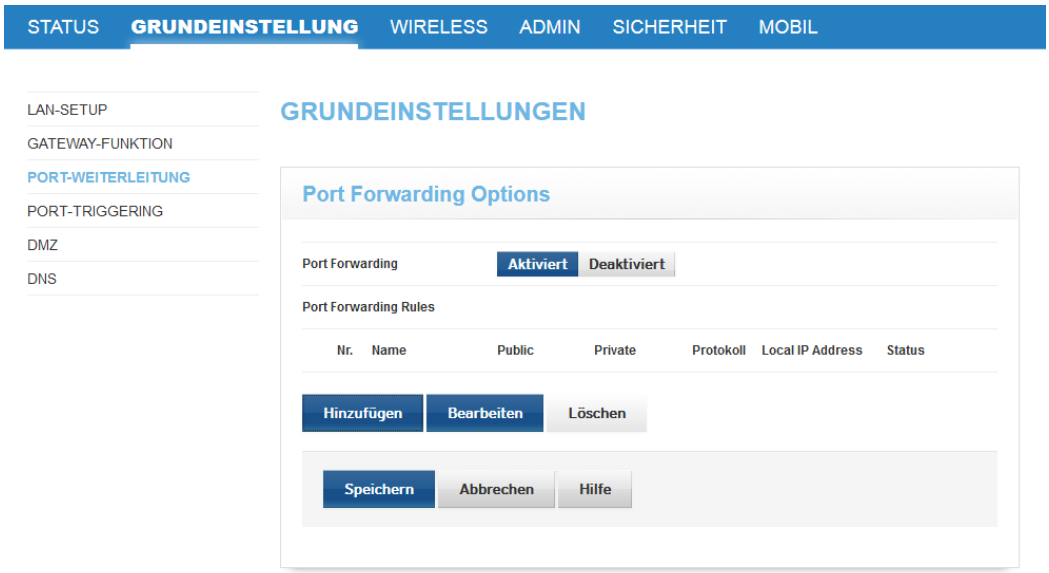
Router mode is the standard mode. The Hitron router, firewall functions and wifi are available. Upon deactivation, the Hitron is set to the modem mode (bridge mode). This setting is necessary for the use of a personal router or firewall. Access to the modem interface is no longer possible in bridge mode. Resetting to the router mode is possible by resetting the modem.



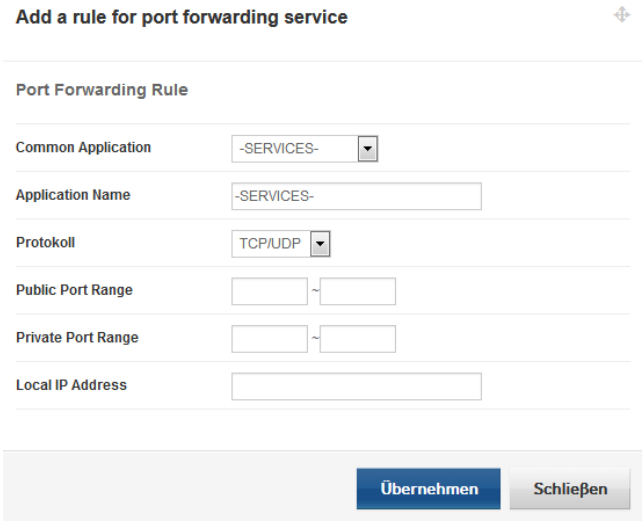

UPnP means Universal Plug and Play and refers to a standard by which a device in the LAN can automatically configure port forwarding in Hitron (and thus also affect the firewall!). Here you can define whether the Hitron allows UPnP or not.

## 4.3 Port Forwarding

Port forwarding is used to redirect incoming data traffic to the appropriate servers or specifically identified applications within your network.




Activated/deactivated: These buttons allow you to add/edit configurable details to the port forwarding table. Use the add/edit options to access a pop-up window where you can configure the rules for port forwarding in a table.




**Common Applications:** This function can be used to define rules that are specifically defined for common and well-known applications. The application can be made available via a drop-down menu. After selecting the application, the application name, protocol and public port range are automatically filled in.

**Protocol:** This field displays the internet protocol type which is used for the port forwarding rule. Examples of protocols are TCP, UDP, TCP/UDP, GRE and ESP.

**Public Port Range:** The public port range defines the ports that can be used to connect the LAN service you have created via port forwarding. The assignable ports are between 1 and 65535.

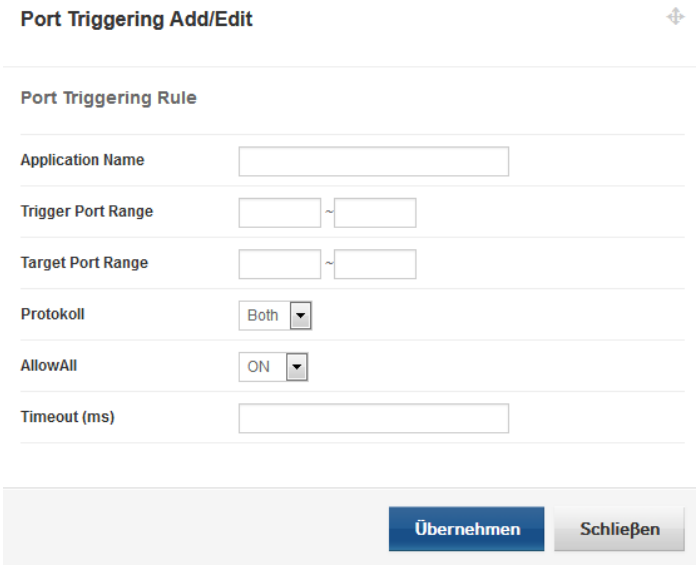
**Private Port Range** The private port range defines the port range on the device to which the rule routes traffic. The size of the private port range must match the size of the public port range and is automatically calculated for you.

**Local IP address:** This field displays the device to which data traffic is forwarded.

## 4.4 Port Triggering

You can activate dynamic port forwarding for certain services/uses with port triggering. The modem monitors the outgoing data traffic on the ports specified in the trigger range. When activity is detected on these ports, the IP address of the device sending the data is stored and the incoming data traffic on the ports in the destination area is forwarded to this IP address on your network. The destination port area is opened so that the traffic released by the Internet can pass through the router's firewall during the time-out period.

Activated/deactivated: These buttons allow you to add/edit configurable details to the port triggering table.




**APPLICATION NAME:** This field is used to identify the port triggering rules.

**TRIGGER PORT RANGE:** This field displays the outbound port range with which this rule opens the destination port range for incoming traffic sessions.

**TARGET PORT RANGE:** This field displays the port to which incoming data traffic is forwarded on the local client PC.

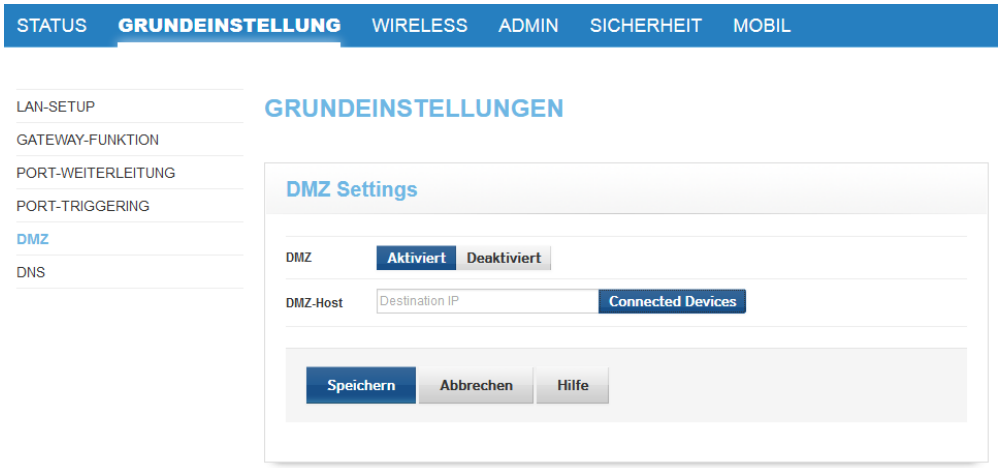
**PROTOCOL:** This field displays the protocol used for this rule.

**TIMEOUT:** This field displays the value of the effective time for triggered and forwarded ports.

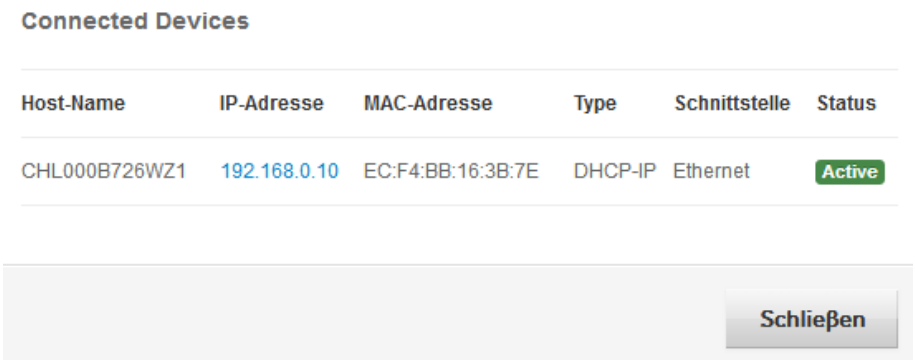
## 4.5 DMZ

DMZ (Demilitarized Zone) allows a selected device to bypass firewall functions and allows unrestricted access from the Internet. If a local client cannot properly run an Internet application behind a NAT firewall, that client can be set up with unrestricted bidirectional Internet access by setting the client up as a DMZ host.

Enabled/Disabled: This field can only be edited if “DMZ” is enabled.



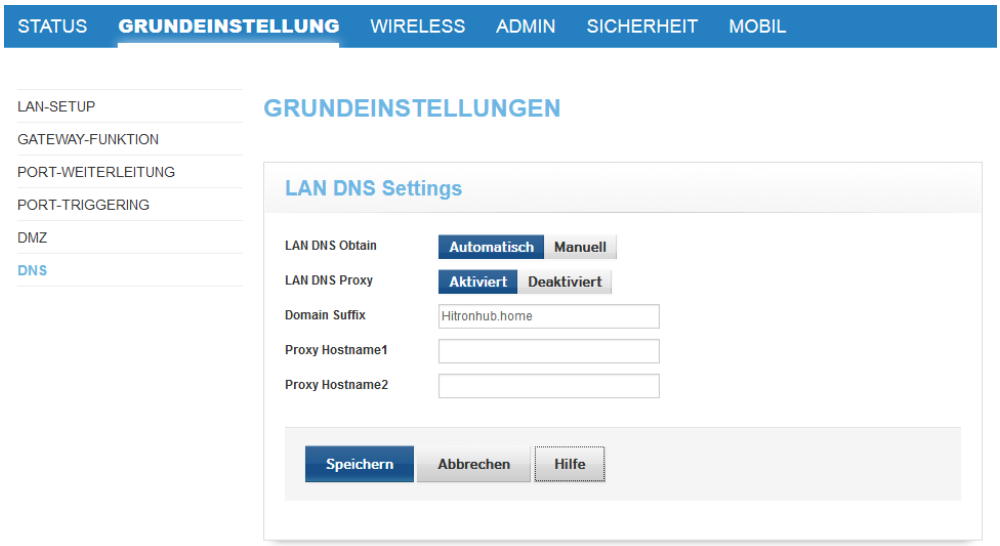

**“CONNECTED DEVICES” BUTTON:** This button displays a pop-up window with the title "Connection Information". The connected devices in your network are shown in this window. Users can select the IP address of the connected devices in order to enter them in the "DMZ Host" field.




Alternatively, you can manually enter an IP address, which must be located in the private LAN subnet of your network.

## 4.6 DNS

DNS (Domain Name System) is used to translate naming conventions for websites into numeric IP addresses. DNS information can be derived from the DNS server and provided directly to the end user device.




**LAN DNS OBTAIN:** When the "Auto" button is selected and the LAN DNS Proxy is disabled, the DNS server address used by the router is automatically given. When the "Manual" button is selected, the DNS server addresses used by the router can be entered manually.

**LAN DNS PROXY:** When “enabled" is selected, your router acts as a DNS proxy server. This setting provides the router's private LAN IP address as the DNS server for the devices on the network. When “disabled” is selected, the router does not act as a DNS proxy server, and the addresses retrieved by the router are provided to devices on the network on the LAN DHCP.

**DOMAIN SUFFIX:** This field defines the domain name of the service. Devices in the network are provided on the LAN-DHCP. If the proxy host names are not defined, they are given a default domain suffix for accessing the Internet. A domain suffix consists of a sub-domain name and a top-level domain name separated by dots (e.g. myoffice.com).

**PROXY HOSTNAME1:** This field should contain the setting “Domain Suffix”. End users can use this setting together with the domain suffix to form a fully qualified domain name (FQDN) to access the router's GUI for administration. For example, if this field is called "host1" and the domain suffix is "myoffice.com", the FQDN for local web access is http://host1.myoffice.com.

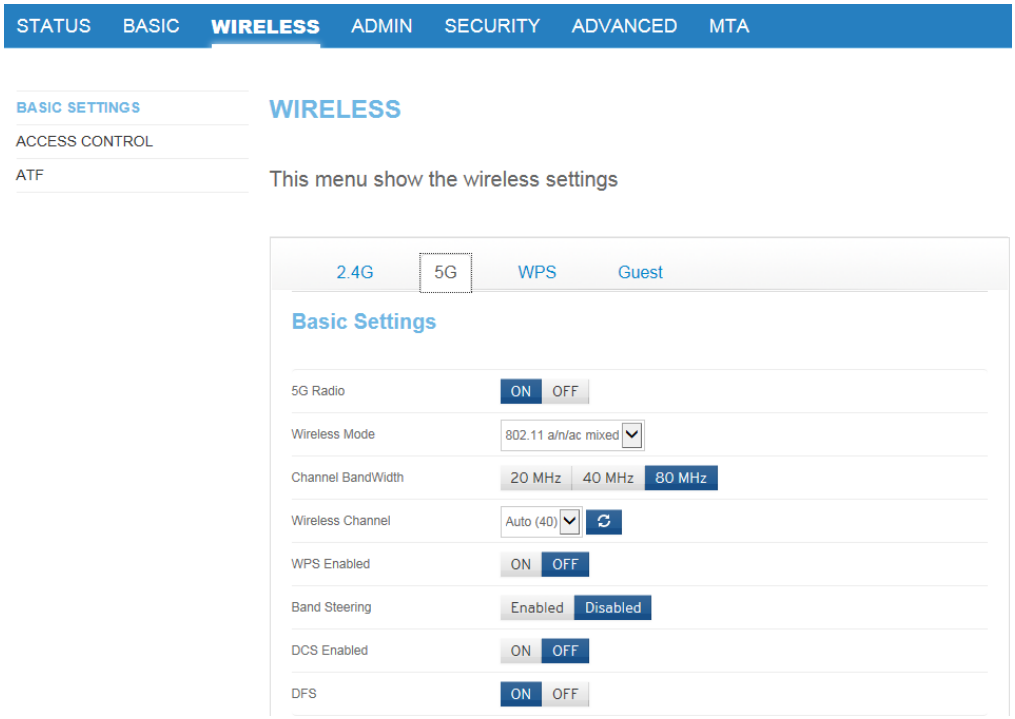
**PROXY HOSTNAME2:** This field should contain the setting “Domain Suffix”. End users can use this setting together with the domain suffix to form a fully qualified domain name (FQDN) to access the router's GUI for administration. For example, if this field is called "host2" and the domain suffix is "myoffice.com", the FQDN for local web access is http://host2.myoffice.com.

The hostname settings can only be used when the LAN DNS proxy setting is set to “enabled”. If it is disabled, end users cannot define it and must use IP addresses to access the GUI.

# 5 WIRELESS

## 5.1 Wifi Basic Settings

Wifi is activated in the standard configuration. The login information is on the back of the modem. Use the on/off buttons to activate or deactivate the wireless network, or push the WIFI Button on the Modem Front.




**2.4G- and 5G tabs:** Change the tabs to select the frequency band which you would like to configure.

**Radio:** ON/OFF switch

**Wireless Mode:** Choose the standard your device supports. The default setting is "802.11b/g/n mixed" for the 2.4 GHz band and "802.11n/ac mixed" for the 5 GHz band.

**Channel Bandwidth:** The 2.4 GHz frequency supports 20 MHz and 20/40 MHz. 20/40 MHz is the default setting.The 5 GHz frequency supports 20 MHz, 40 MHz and 80 MHz. 80 MHz is the default setting.

**Wireless Channel:** Choose the wireless channel you want your device to use. When set to “Auto”, your service scans the surroundings and selects the optimum available wireless channel. This setting is set to "Auto" by default. In the 5 GHz band, it can take up to ten minutes (depending on the channel) after selecting manually before the wireless network becomes visible.

**WPS Enabled:** general WPS ON/OFF switch

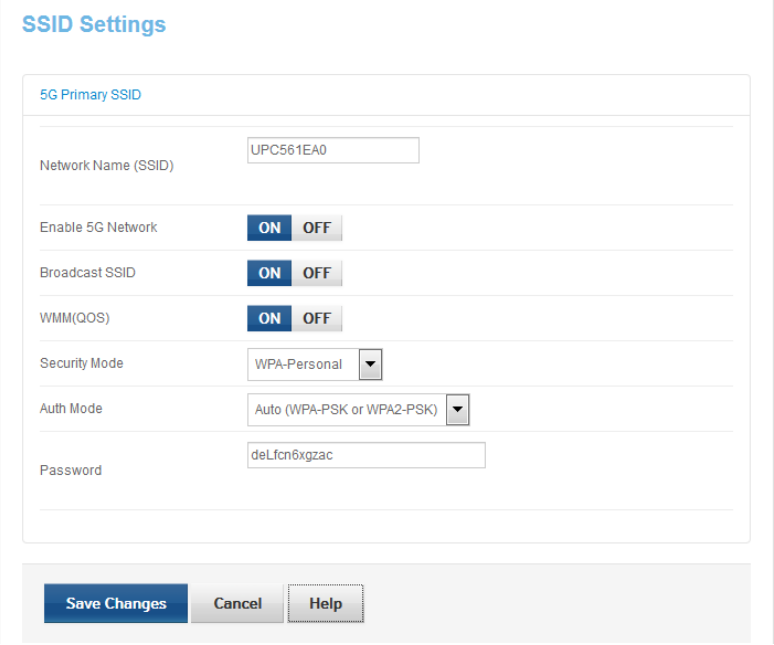
**Band Steering:** Band steering automatically connects your devices to the best available WiFi frequency – 2.4 GHz and 5 GHz – and ask you to choose between them when connecting a device to your network. When enabled you don’t need to choose which frequency will best support your device – the modem does it automatically.

**DCS Enable:** Enable/disable DCS (Dynamic Channel Selection) support.

Dynamic Channel Selection is a feature that monitor noise levels on the channel and makes the gateway change to a clean channel automatically.

**DFS (DYNAMIC FREQUENCY SELECTION):** This function is only available for the 5 GHz band and is used to avoid interference. Use the On/Off buttons to enable or disable this setting. If DFS is switched off, the transmission power is reduced and the number of available channels is greatly reduced.

## 5.2 SSID Settings




**Network Name (SSID):** Enter your SSID name here.

**Enable 2.4G Network:** Use the On/Off buttons to enable/disable the wifi network. If both 2.4G and 5G networks are disabled, the wifi is completely switched off.

**Broadcast SSID:** Use the On/Off buttons to make the transmission of a specific SSID visible/invisible. By selecting "Off" this SSID is not visible to other devices.

**WMM (QoS):** Wi-Fi Multimedia (WMM) is a wireless Quality of Service (QoS) feature that improves the quality of audio, video and voice applications by prioritizing wireless data traffic. The setup section contains the IP information that is distributed by the gateway to your local area network.

**Security Mode:** In the displayed table, you can select the type of wireless security you want to use. WIRELESS SECURITY MODE: The drop-down menu allows users to choose between "NONE", "WEP" and "WPA Personal". If NO-NE is selected, no security mechanism is applied, and any wireless client can connect to this AP. If you select «WEP» or «WPA-Personal», the corresponding table is displayed for further settings.

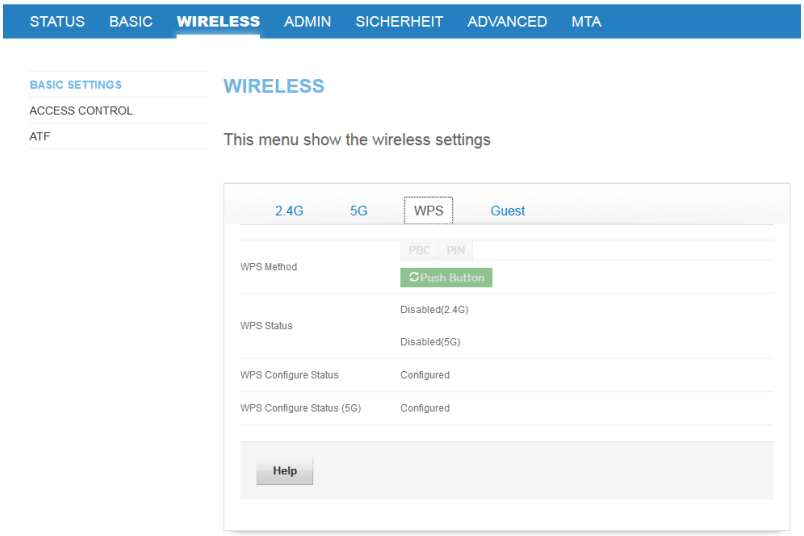
**Authentication:** Users can choose WPA-PSK (WPA Pre-Shared Key), WPA2-PSK or Auto (compatible with WPA-PSK and WPA2-PSK client).

**Password:** This is the password used by WPA / WPA2 encryption. The default password can be overwritten.

## 5.3 WPS Connectivity

For the WPS operation, the PBC (push-button Configuration) function will start using the WPS button (on the Modem Front or virtually). If it's pressed, the device would begin the WPS negotiation process with another wireless client which run PBC mode also.

If the PIN button is pressed, the device would pop-up a dialog box for users to fill in a 8-character PIN code for WPS negotiation. At the same time, the wireless client must use the same PIN code for WPS negotiation.

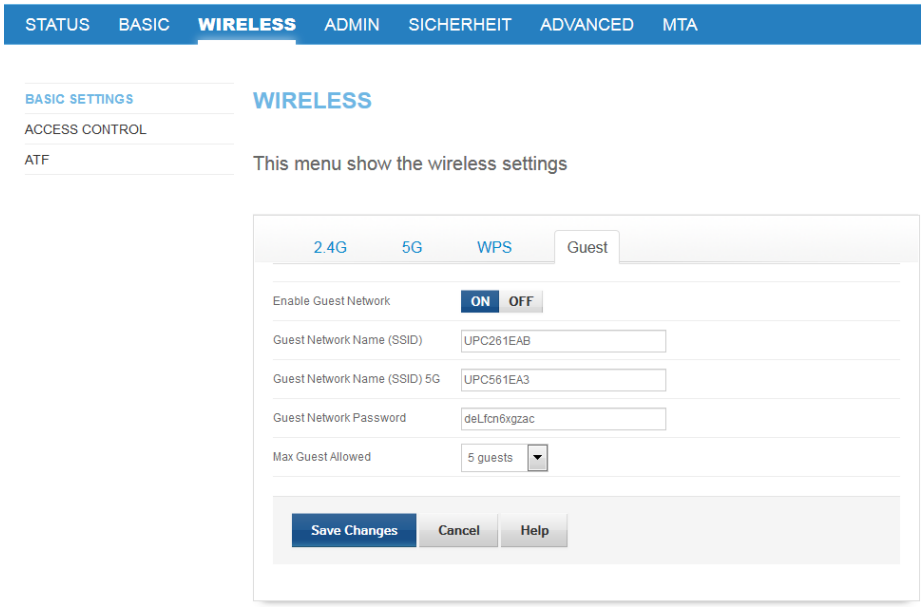



**WPS PBC:** Push Button Configuration.

**WPS Client PIN:** Enter the PIN generated from your client device.

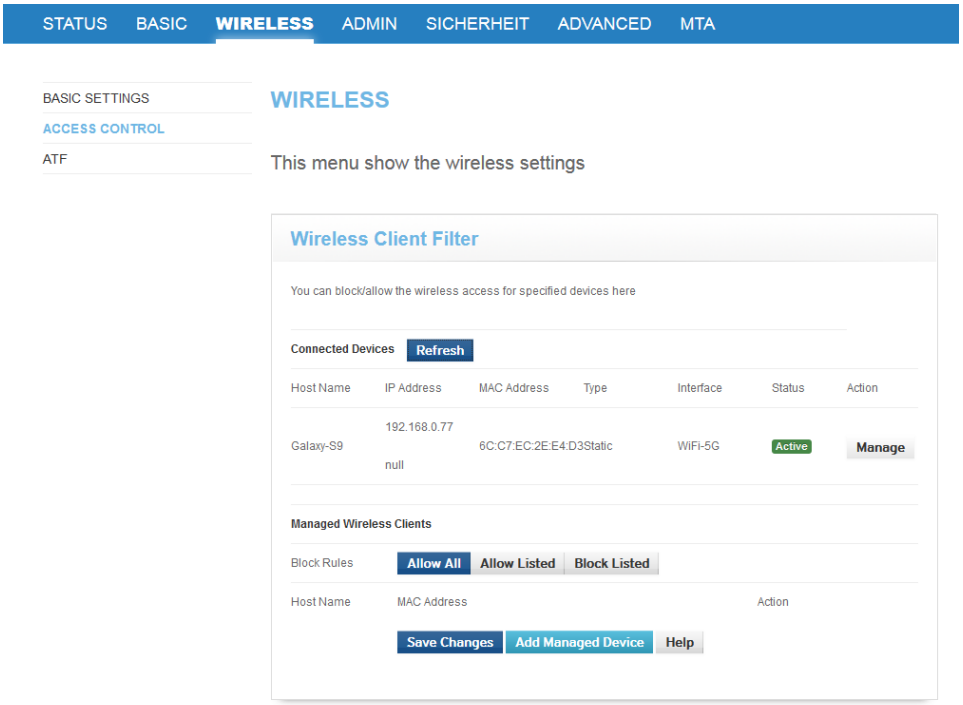
## 5.4 Guest Network

Guest access allows visitors to connect to the Internet without accessing other computers or personal information. You can connect to your guest network, go online and surf the Internet. The guest LAN is a separate network.



## 5.5 Access Control

In this section, you can specify which users and devices can access specific SSIDs.




The "**Block Listed**" button allows certain devices to access the gateway. You can access the devices on this list via “**Allow Listed**”. "**Allow All**" allows gateway access to all devices connected to the gateway.

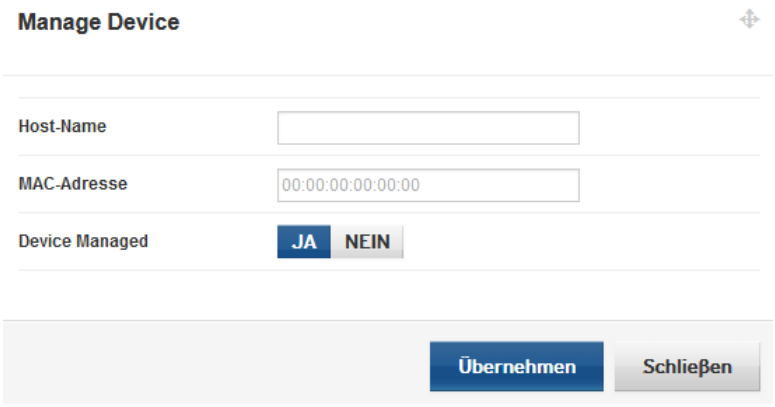
Devices can be added to the rule table in two different ways:

The first method is to use the device’s "**Manage**" button in the "**Connected Devices**" table. As soon as this button has been pressed, a pop-up window will appear with the following fields to be configured:

MAC address: This field is filled with the MAC addresses from the "**Connected Devices**" table.


The second method is to click the "Add Managed Device" button. A pop-up window opens showing no information in the Host Name field and a predefined MAC address with "00: 00: 00: 00: 00: 00”. End

users must enter the settings in these two fields manually. The other fields in this pop-up window can be configured in the same way as the first method above.

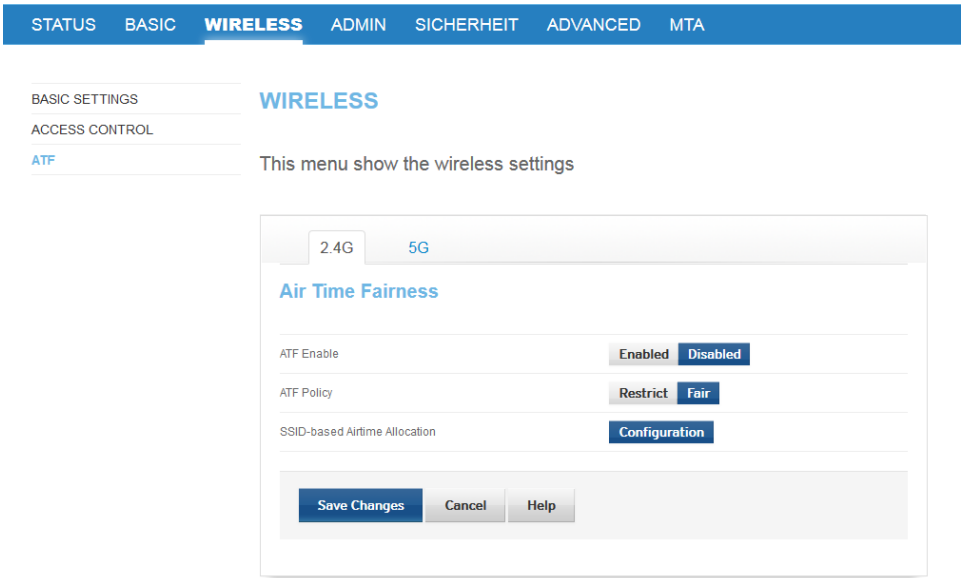



Press "Apply" to confirm or "Close" to ignore.

Users must return to the “Access Control” page and click “Save Changes” to activate the changes.

## 5.6 ATF Air Time Fairness

Air Time Fairness (ATF) focuses primarily on planning fairness for the transmission of access point (AP) traffic and the efficient use of wifi bandwidth. The algorithm does not deal with the transmission of frames from other clients.




**ATM algorithm type:** This parameter is used to disable the ATM algorithm or configure the type of ATM algorithm that must be used to apply Air Time Fairness. This parameter **must** have the following values: Disable, Global Fairness or Weighted Fairness.

**ATF Policy** controls two different scheduling algorithms that are mutually exclusive: restrict queuing and fair queuing. Restrict queuing follows a strict send time allocation as configured by the user and does not attempt to use unused bandwidth. The "fair queue" algorithm, on the other hand, guarantees configured transmission time in overloaded environments and also uses unused bandwidth.

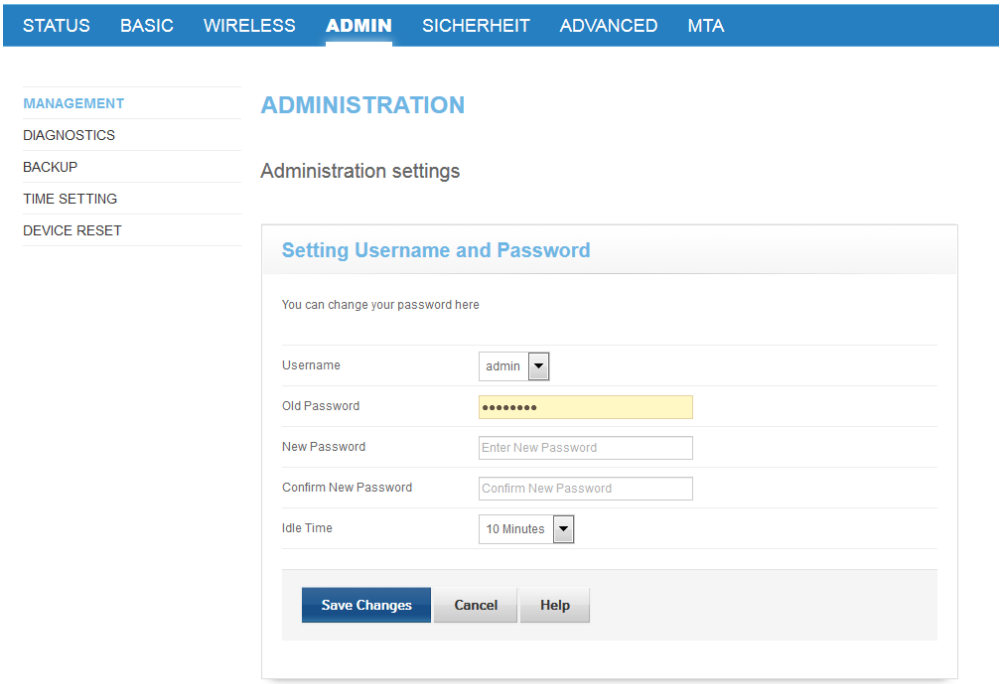
**SSID-based air time allocation:** This parameter configures the weighting for each SSID. The ATM weighting of an SSID must be a value between 5 and 100. When you press the “Delete” button, the Air Time percentage of this SSID becomes -1. This means that the Air Time percentage of this SSID is deleted. If you want to set a transmission time for an SSID, you must first press the Set button. If the SSID status is disabled, the transmission time of the SSID you specified is invalid.

**Allocation of transmission time per station:** This mechanism will primarily be used to ensure that STAs are allocated sufficient bandwidth to perform their respective tasks (video streaming, etc.). This parameter is used to define the weightings for the individual STAs. The transmission time of STAs connected to an SSID **must not** exceed 100%.

# 6 ADMIN

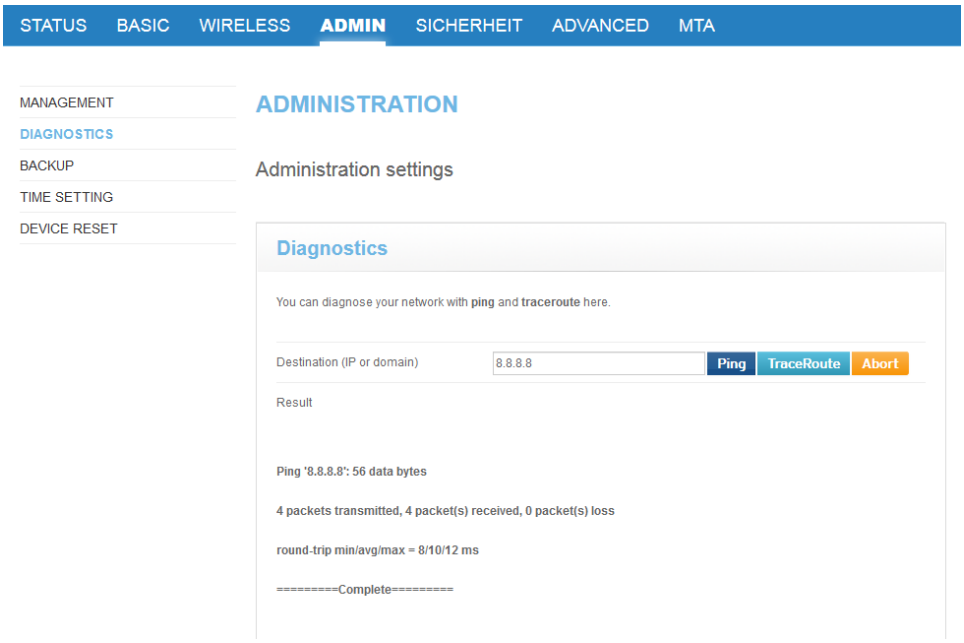
## 6.1 Management

Users can use this section to change their password to access the GUI. The settings for the username and the GUI Idle Timeout can only be changed by the user.




## 6.2 Diagnostics

Ping or Traceroute for a connection check.




### 6.3 Backup

Here the configurations of the Hitron modem can be stored locally. With the restore option, the saved state can be restored at any time.

### 6.4 Time Setting

On this page, users can choose between two time setting protocols, ToD and SNTP.

For each time setting log, users can select the time zone they are in.

The ToD protocol is selected by default based on the DOCSIS provisioning settings.

This page also contains the Daylight Saving Time function. When this feature is enabled, the service follows the Daylight Saving Time rule defined for each time zone so that users can adjust the time.

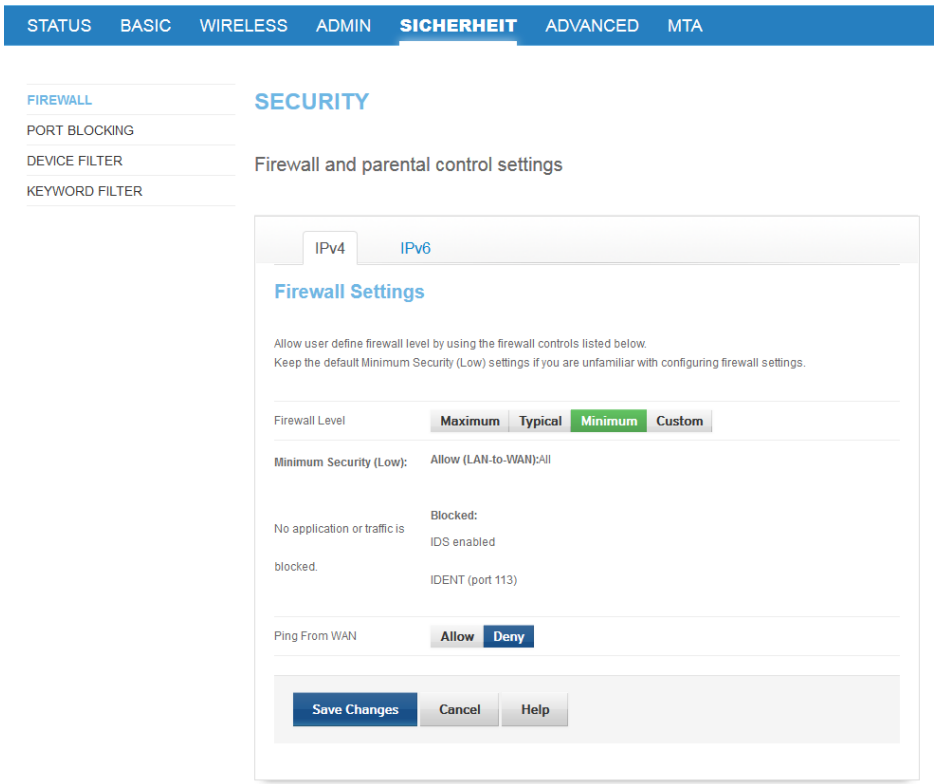
### 6.5 Reset

Restart the modem or reset to factory settings

## 7 SECURITY

### 7.1 Firewall

Users can define the firewall security level which is needed for their service. There are three pre-defined firewall levels. Maximum, standard and minimum. Users can define their own firewall rules with the user-defined setting.




**MAXIMUM SECURITY:** From LAN to WAN, all applications including voice applications (e.g. GTalk, Skype) and P2P applications are blocked. This setting enables Internet surfing, e-mail services, VPN services, DNS services and iTunes services.

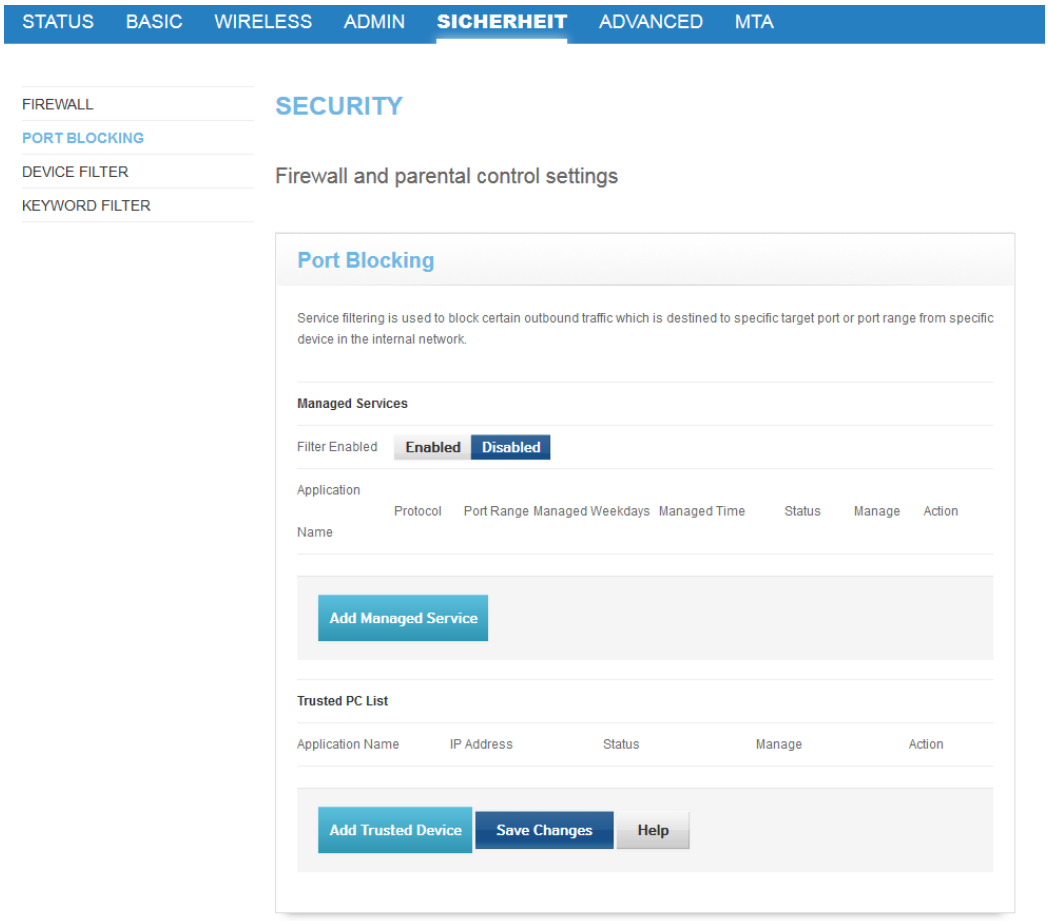
**TYPICAL SECURITY:** From LAN to WAN, P2P applications and ping to the gateway are blocked, but all traffic is allowed.

**MINIMUM SECURITY** No application or traffic is blocked from LAN to WAN. This is the standard configuration.

**USER-DEFINED SECURITY:** Frequently-used applications can be blocked by clicking the "Reject" button. All other services can be activated by default. To block a specific port, you can use the "Service Filter" option.

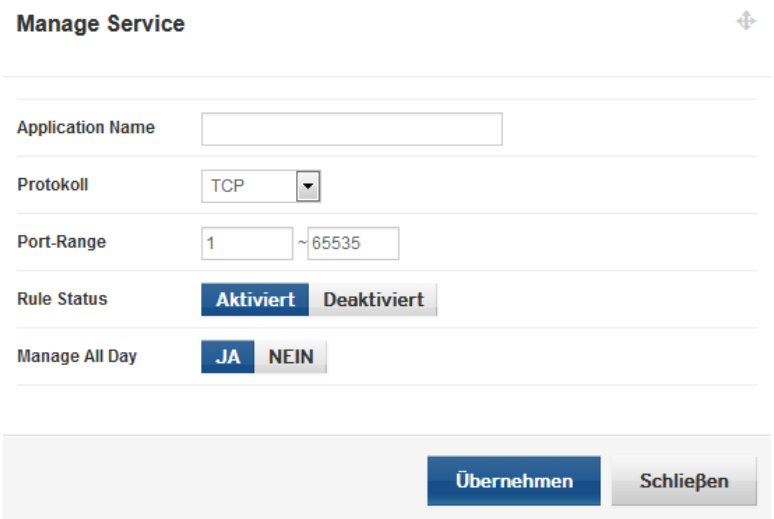
## 7.2 Port Blocking

Port Blocking is used to block certain outbound traffic that is directed from a computer on the internal network to a specific destination port or port range. In the list of trusted PCs, a PC entered in the list is excluded from the filtering defined in the service filter table.




This is how you configure the service filter rules:

Service filtering is used to block certain outbound traffic that is directed from a computer on the internal network to a specific destination port or port range. If the filter rule is enabled, users can press the "Add Managed Service" button to add a service filter rule. A pop-up window is displayed to work below the settings.




Application name: The rule is specified in this field.

**Protocol:** Users can select the protocol (TCP, USP or TCP/UDP) for the filter rule.

Port Range: With this setting users can set-up the port range, which allows the setting from 1 to 65535.

**Rule Status:** In this field the specific rule is activated/deactivated.

**Manage All Day** This field will be used to control the time plan for how the rule is used. If you select the "YES" button, more control panels will be available for schedule management.

The additional setting used for planning, including the weekday setting and the start/end time setting.

**Managed Weekdays** If “Manage All Day” is set to “YES”, this field will be shown. Users can select the days this rule should be used on. Saturdays and Sundays are included in the weekdays.

**Manage Time** This field is used to set the start time and the end time of the rule.

After you have set the above setting, click the “Apply” button to apply the setting to the Service Filter table, or press “Close” to ignore the setting. If you want to delete the rule, simply select the "Deactivated" button for the "Rule Status" field.

After returning to the Service Filter page, users still need to click "Save Changes" to make the setting effective.

How to configure a list of trusted PCs:

Users can click the “Add Trusted Device” button to add devices to the list. When you click the "Add Trusted Device" button, a pop-up window appears where users can make the settings as described below.


**Host Name** The host name of the added device is given in this field.

**MAC address** This field contains the trusted PC’s MAC address.

**Rule Status:** Users can activate/deactivate this rule using the "Activated"/"Deactivated" buttons.

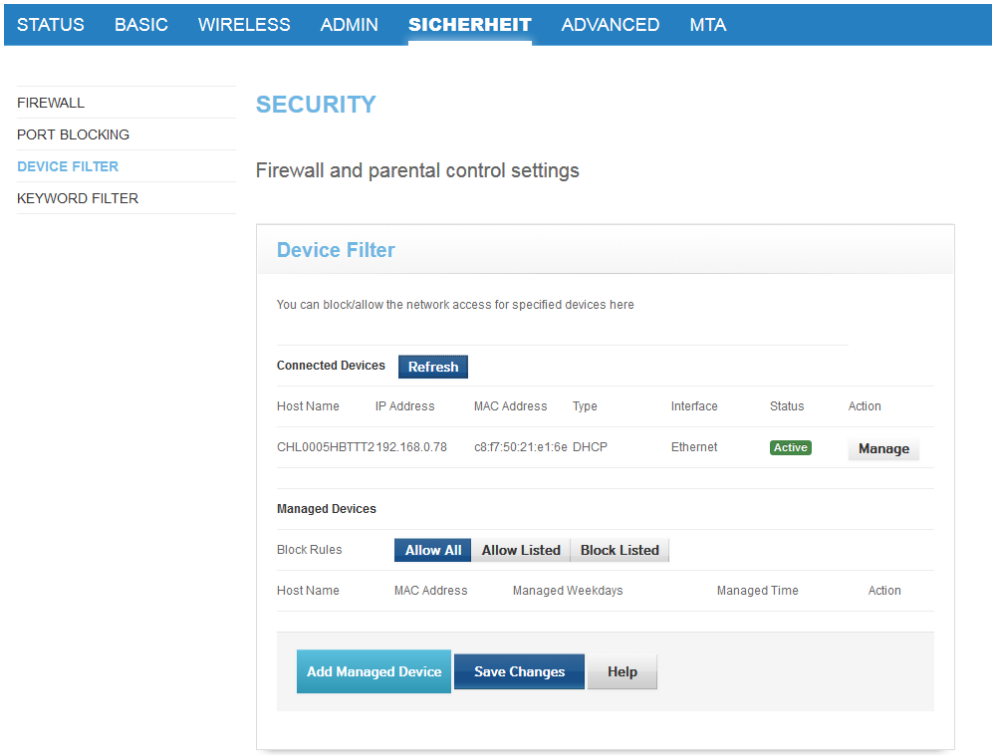
After you have set the above setting, click the “Apply” button to add the setting to the list of trusted PCs, or press “Close” to ignore the setting.

After returning to the service filter page, users still need to click "Save Changes" to activate the settings.

“Delete” button Deletes an existing rule from the list of trusted PCs.

## 7.3 Device Filter

The "Device filter" setting allows you to specify on which computers access to the Internet and your network may be blocked. Also, the setting can control blocking/allowing based on the schedule, which is defined by the rule.




How to configure the device filter setting:

You can use the device filter to create a list of computers that are denied connection to the gateway via the LAN switch ports. All of the computers in the list cannot connect to your gateway if you click the **“Block Listed”** button and the access time meets the schedule set by the rule. Any computer specified in the list can connect to your gateway if you click the **“Allow Listed”** button and the access time meets the schedule set by the rule. After pressing the **"Allow All"** button, all computers, regardless of the settings in the rules table, can connect to the Gateway.

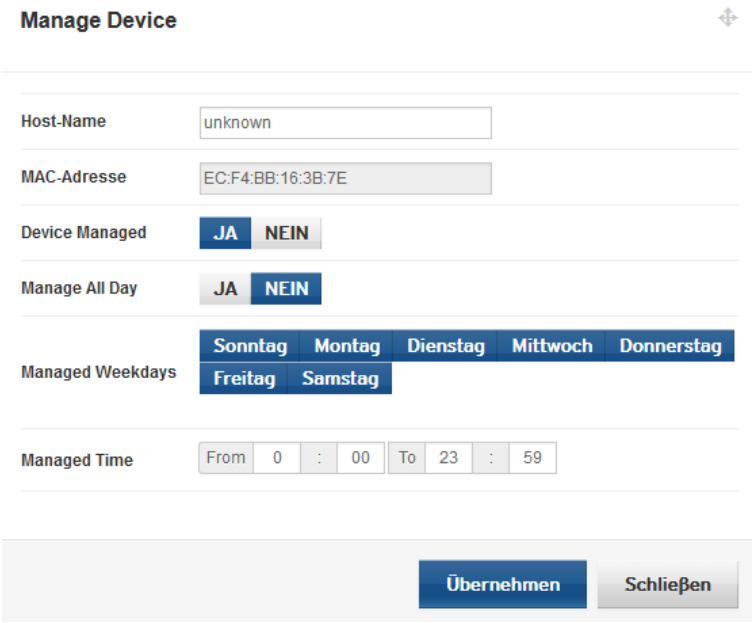
There are two different methods for inserting the PC into the rule table.

The first is to press the "Manage" button of the learned PC in the "Connected Devices" table. After you click the Manage button, a pop-up window appears with the following field:


**MAC address** This field is filled with the learned MAC addresses from the connected devices table.

**Manage Device** If you press the "YES" button here, the line "Manage all day" is created. If the "NO" button is pressed and the "Apply" button is also pressed, the rule in the device filter table is deleted.

**Manage All Day** The default setting is "YES". This means that the rule is applied seven days a week and 24 hours a day. If you press the "NO" button, the "Managed Weekdays" and "Time" lines are displayed and the user can set the schedule for the rule.




**Managed Weekdays** Users can press any combination of the seven keys (Sunday to Saturday).

**Manage Time** Users can select the hours and minutes of the day for the schedule of the rule.

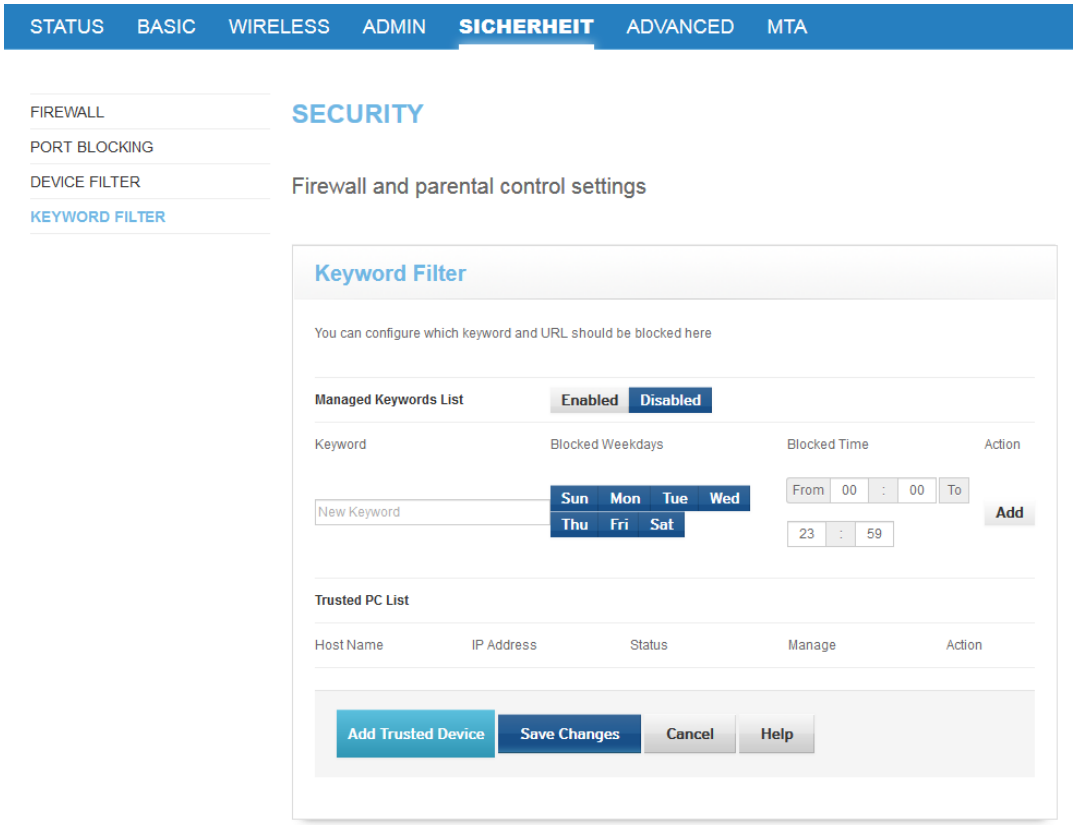
The second method is to click the "**Add Managed Device"** button. A pop-up window that allows you to add manually.

After you have specified the above setting, press the **"Apply"** button to apply the setting to the device filter table, or press **"Close"** to ignore the setting. If you want to delete the rule, simply select the "NO" button for the "Device managed" field.

After returning to the device filter page, users must click "Save Changes" for the settings to take place.

## 7.4 Keyword Filter

Users can configure which keyword should be locked when it is used in the URL. At the same time, users can set up a schedule to be used with the rule. If users want some computers to be excluded from keyword locking, this can be configured in the list of trusted PCs.




This is how you configure the keyword filter:

If you want to specify one or more keywords, you must first click on the **"Enabled"** button. Then enter the keyword you want to block and select the time. Finally, click on the ***"Add"*** button. Users can repeat this procedure to add the keyword individually.

How to configure a list of trusted PCs:

Users can click the **“Add Trusted Device”** button to add devices to the list. When you click the "**Add Trusted Device"** button, a pop-up window appears where users can make the settings as described below.


**Hostname** This field specifies the hostname of the computer.

**MAC addresses** This field must be filled with the computer's MAC address which is excluded from keyword filter.

**Rule Status:** Users can activate/deactivate this rule using the "Activated"/"Deactivated" buttons.

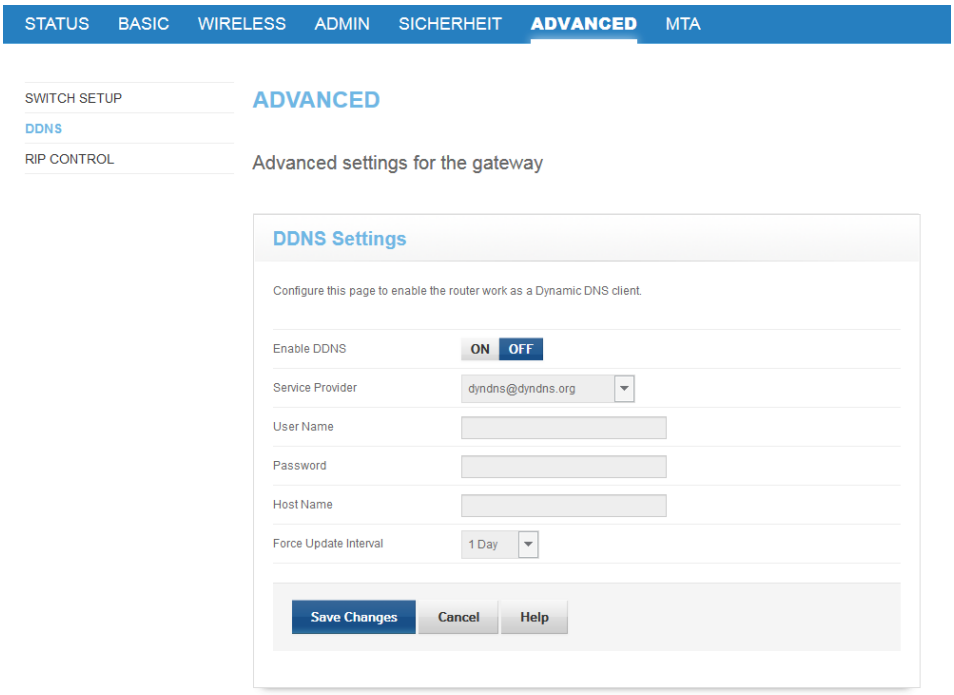
After you have made the above setting, click the "Apply" button to add the setting to the list of trusted PCs, or press "Close" to ignore the setting.

After returning to the keyword filter page, users still need to click "Save Changes" to activate the setting.

"Delete" button: Deletes an existing rule from the list of trusted PCs.

## 7.1 DDNS

Dynamic DNS or DDNS is a technique for dynamically updating domains in the Domain Name System (DNS). The purpose is that a computer (e.g. a PC or a router) automatically and quickly changes the associated domain entry after changing its IP address.




**DDNS** Use the on/off button to activate/deactivate the DDNS service. When the DDNS service is disabled, the remaining fields are not available for editing or configuring.

**SERVICE PROVIDER:** Users can select their DDNS service provider via the drop-down menu in this field.

**USER NAME:** User name for the DDNS service.

**PASSWORD:** Password for the DDNS service.

**HOST NAME:** Reserved host name for the DDNS service.