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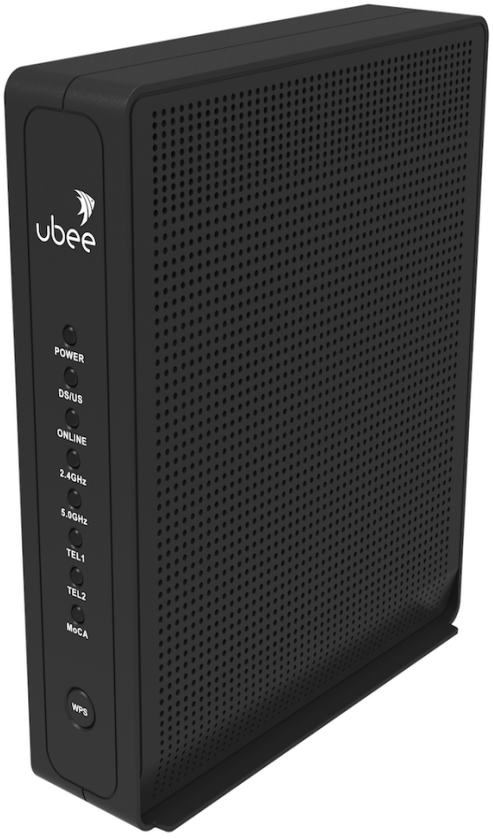

UBC1329AA00

DOCSIS 3.1
Advanced Wi-Fi 6 Voice Gateway

Firmware Version: 12.10.xxxx

User Manual

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Contents

1 Introduction

Welcome to the Ubee family of data networking products. This guide is specific to the UBC1329AA00 Advanced Wi-Fi 6 Voice Gateway and serves the following purposes:

- Provides instructions on how to install, connect and operate the UBC1329AA00 Advanced Wi-Fi 6 Voice Gateway.
- Provides directions for accessing the Web graphical user interface (GUI) for configuration and management of the gateway.
- Defines all relevant device compliance standards and physical specifications.
- Provides tips and information for deploying and troubleshooting your wireless network.

See the following topics:

1.1 Safety and Regulatory Information

Follow these safety and regulatory standards when installing and operating the UBC1329AA00 Advanced Wi-Fi 6 Voice Gateway.

1.1.1 Safety

WARNING: The following information provides safety guidelines for anyone installing and maintaining the UBC1329AA00. Read all safety instructions in this guide before attempting to unpack, install, operate, or connect power to this product. Follow all instruction labels on the device itself. Comply with the following safety guidelines for proper operation of the device.

- Follow basic safety precautions to reduce the risk of fire, electrical shock, and injury. To prevent fire or shock hazard, do not expose the unit to rain and moisture or install this product near water. Never spill any form of liquid on or into this product. Do not use liquid cleaners or aerosol cleaners on or in close proximity to this device. Clean with a soft dry cloth.

- Do not insert sharp objects into the product's module openings or empty slots. Doing so can accidentally damage its parts and/or cause electric shock.
- Electrostatic discharge (ESD) can permanently damage semiconductor devices. Always follow ESD-prevention guidelines for equipment handling and storage.
- Use only the power adapter included with the device. Do not attach the power adapter cable to building surfaces or floorings.
- Rest the power adapter/cable freely without any obstacles. Do not place heavy items on top of the cable. Do not abuse, step on or walk on the cable or adapter.
- Do not place heavy objects on top of the device. Do not place the device on an unstable stand or table; the device can fall and become damaged.
- Do not block the slots and openings in the module housing that provide ventilation to prevent overheating the device. Do not expose this device to direct sunlight. Do not place hot devices close to this unit; it may degrade it or cause damage.
- Place the device on a cool surface. Failure to do so may result in overheating which can cause damage to the unit or furniture.

1.1.2 Eco-Environmental Statements

The following eco-environmental statements apply to the UBC1329AA00.

Packaging Collection and Recovery Requirements:

Countries, states, localities, or other jurisdictions may require that systems be established for the return and/or collection of packaging waste from the consumer, or other end user, or from the waste stream. Additionally, reuse, recovery, and/or recycling targets for the return and/or collection of the packaging waste can be established. For more information regarding collection and recovery of packaging and packaging waste within specific jurisdictions, contact Ubee Interactive at www.ubeeinteractive.com.

1.1.3 Regulatory Statements

The following regulatory statements apply to the UBC1329AA00.

Industry North America Statement:

This device complies with RSS-210 of the Industry North America Rules. Operation is subject to the following two conditions:

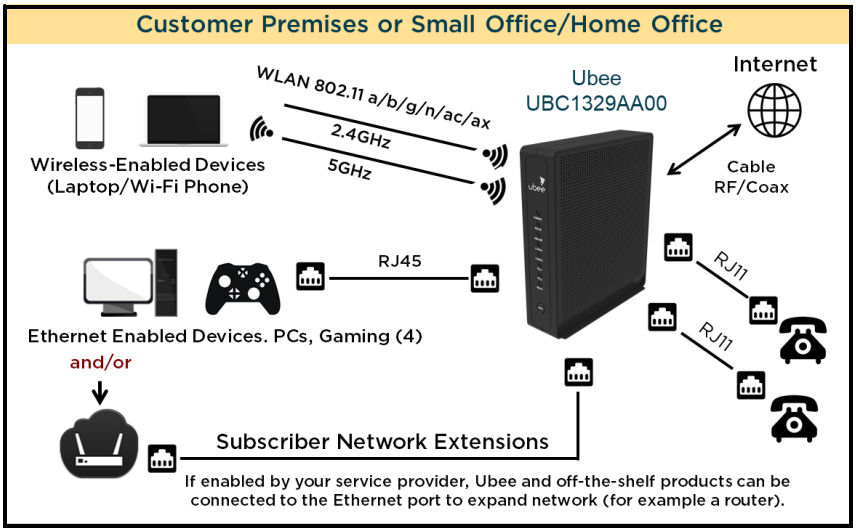
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

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 a minimum distance of 20cm between itself and your body. This device must not be co-located with or operating in conjunction with any other antenna or transmitter.

1.2 Application Example

The following diagram illustrates the general connection topology and applications of the UBC1329AA00.



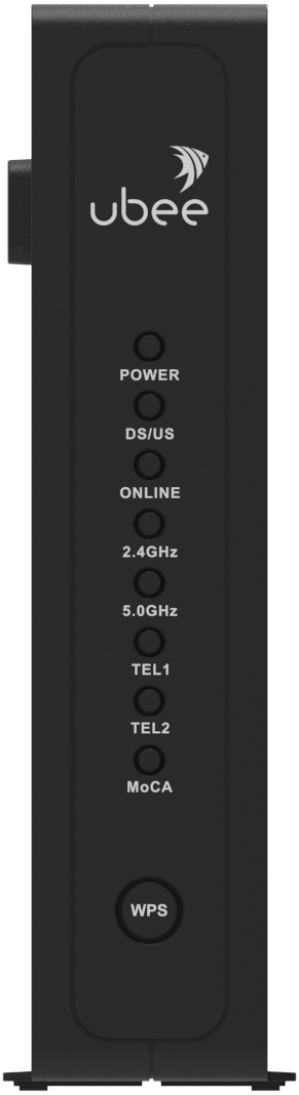
1.3 Device Package Components

The package for the UBC1329AA00 contains the following items:

Item	Description
	1 - RJ45 Cable (Ethernet) Length ~ 1 meter (~39 inches) Sample image, actual appearance subject to change.
	1 - External Power Adapter Input: 12V, 2.5A CE and UL Certified Sample image, actual appearance subject to change.

1.4 Device Front and Rear Panels

The following images represent the UBC1329AA00 front and rear panels. See Device Connections on page 6, and LED Behavior on page 6 for detailed descriptions.



Front Panel

Rear Panel

1.5 Device Connections

The following table describes the connections on the rear panel of the UBC1329AA00.

Label	Description
RESET	To reset (power cycle) the device, use a pointed object like the end of a paper clip to push down the reset button. To power cycle the device, hold for *less than 5 seconds*. To reset to factory default settings, hold for *more than 5 seconds*. The UBC1329AA00 will reset and reboot. **WARNING:** Resetting to factory defaults will erase any and all settings you have configured and will restore to factory default settings.
ETHERNET 1-4	Connects to Ethernet devices such as computers, gaming consoles, and/or routers/hubs using an RJ45 cable. Each Ethernet port on the back panel of the device has an LED to indicate its status when an Ethernet-enabled device is connected.
CABLE	Connects to the cable outlet (with the cable provided by your service provider), or a cable splitter connected to the cable outlet.
TEL1 TEL2	Connects to standard telephones using an RJ11 cable. Telephone service must be enabled by your service provider.
PWR (POWER)	Connects the power cable to the device. Use only the power cable provided with the UBC1329AA00.
BATT (BATTERY)	Connects to an **OPTIONAL** external battery backup unit. The battery is not included in the product packaging. Subscribers must contact the service provider to obtain a battery. Battery supports continuous voice service during power outages, and provides up to 24 hours standby time, and 5 hours talk time with one line active. Actual performance is affected by battery age and operating environment.

1.6 LED Behavior

The following tables summarize the behavior of the LEDs on both the front and rear panels of the UBC1329AA00.

FRONT PANEL		
LED	**Color**	**Description**
POWER	**GREEN**	**On –** Internal power-on completed successfully. **Flashing –** Power-on failed. **NOTE:** The LED blinks briefly immediately after powering on the device. **Off –** No power supplied to the device.

FRONT PANEL		
LED	**Color**	**Description**
DS/US (downstream/ upstream)	**GREEN**	**Flashing –** When DS and US scan is in progress. Also flashes when a firmware update is in progress. **On –** Locked to DS and US channels and registered OK, and when data is being passed.
ONLINE	**GREEN**	**Flashing –** Obtaining IP address and configuration file. **On –** Configuration completed successfully, network connected. **Off –** Network connect failed.
2.4GHz	**GREEN**	**Flashing –** 2.4GHz Wi-Fi traffic is being passed. **On –** 2.4GHz Wi-Fi is enabled. **Off –** 2.4GHz Wi-Fi is disabled.
5GHz	**GREEN**	**Flashing –** 5GHz Wi-Fi traffic is being passed. **On –** 5GHz Wi-Fi is enabled. **Off –** 5GHz Wi-Fi is disabled.
TEL1 **TEL2**	**GREEN**	**On –** Telephony is enabled and telephone is on-hook. **Off –** Telephony is not provisioned. **Flashing–** Call is in progress or eMTA is attempting to register.
MoCA	**GREEN**	**On –** Device is connected to a MoCA network. **Off –** Device is NOT connected to a MoCA network.

REAR PANEL		
LED	**Color**	**Description**
ETHERNET 1-4	**GREEN / ORANGE**	**On Green –** An Ethernet device is connected to the device at 1000 Mbps speeds (Gigabit Ethernet). **On Orange –** An Ethernet device is connected to the device at 10/100 Mbps speeds. **Flashing (Green or Orange) –** Data is being passed between the UBC1329AA00 and the connected device. The Ethernet ports are used to connect Ethernet devices such as computers, gaming consoles, and/or routers/hubs to the UBC1329AA00 using RJ-45 cables. Each Ethernet port on the back panel of the device has an LED to indicate its status when an Ethernet device is connected. 

1.7 Specifications and Standards

The following list provides the features and specifications of the UBC1329AA00.

Interfaces and Standards:

- Cable: F-Connector, female
- LAN: (4) 10/100/1000 Mbps RJ45 ports, auto sensing MDI-X
- Telephony: (2) RJ11 ports
- PacketCable 1.0/1.5/2.0 compatible
- DOCSIS 3.1 certified
- DOCSIS 1.0/1.1/2.0/3.0 certified
- MoCA 2.0 enabled
- CE/FCC Class B, ENERGY STAR certified, Wi-Fi Alliance certified

Downstream:*

- Frequency Range: 108MHz/1002MHz
- Capture Bandwidth: 1GHz
- Modulation: 64 or 256 QAM and OFDM: up to 4096 QAM
- Maximum DOCSIS 3.1 Data Rate: 2 x 192MHz OFDM channels provide capacity up to 5Gbps
- Maximum DOCSIS 3.0 Data Rate: 32 downstream channels provide speeds up to 1372Mbps
- Symbol Rate: 5361 Ksps
- RF (cable) Input Power:
    - -15 to +15dBmV (64/256 QAM) (SC-QAM)
    - -6 to +15dBmV (4096 QAM) (OFDM)
- Input Impedance: 75 Ω

Upstream:*

- Frequency Range: 5MHz - 42MHz/85MHz switchable
- Modulation: QPSK or 8/16/32/64/128 QAM and OFDMA: up to 4096 QAM
- Maximum DOCSIS 3.1 Data Rate: 2 x 96MHz OFDMA channels provide capacity up to 2Gbps

- Maximum DOCSIS 3.0 Data Rate: 8 upstream channels provide speeds up to 246Mbps
- Symbol Rate: 160, 320, 640, 1280, 2560, 5120 Ksps
- RF Output Power (single channel):
    - TDMA: +17dBmV to +61dBmV
    - S-CDMA: +17dBmV to +56dBmV
- RF (cable) Output Power:
    - A-TDMA/S-CDMA (one channel): +65dBmV (SC-QAM)
    - OFDMA: +65dBmV

* Actual speeds vary based on factors including network configuration and speed.

Voice:

- PacketCable 1.5 (NCS) OR 2.0 (IMS/SIP) compatible, based on firmware version
- Ring Voltage: 270 VAC, pk-pk (tip ring), Line Voltage Onhook: -48 Volts, Loop Current: 20mA/41mA, Ring Capability: 2K ft., 5REN, Hook State: Signaling Loop Start
- DTMF Tone Detection, T.38 Fax Relay (G.711), Echo Cancellation (G.168)/ Silence Suppression, Voice Active Detection and Comfort Noise Generation
- G.722 codec, WB SLIC

Wireless:

- Dual-band concurrent, 2.4 and 5GHz high power radios, supporting 8 SSIDs per radio
- 802.11a/b/g/n/ac/ax (Wi-Fi 6) compliant with link speeds up to 5700Mbps (860Mbps at 2.4GHz + 4800Mbps at 5GHz)
- Beam forming technology and high powered amplifiers to extend wireless range
- Internal Antennas:
    - 2.4GHz: 3 Tx (transmit) and 3 Rx (receive)
    - 5GHz: 4 Tx (transmit) and 4 Rx (receive)
- WPA, WPA2, WPA-PSK, WPA2-PSK & 64/128-bit WEP encryption
- Wireless Multimedia (WMM) support
- Wireless Protected Setup (WPS): PIN and PBC

Security and Network:

- DHCP Client/Server
- Static IP network assignment
- RIPv1/v2, Ethernet 10/100/1000 Base-T, full duplex auto-negotiate functionality
- IPv4 and IPv6 support
- NAT Firewall, MAC/IP/Port filtering, parental control, stateful packet inspection (SPI), DoS attack protection
- UPnP/DLNA
- VPN pass-through and VPN end-point support (IPSec/T2TP/PPTP), TACACS or RADIUS authentication

Device Management:

- Supports UAPSD (power savings)
- DOCSIS, Web-Based, and XML Configuration
- Telnet/SSH remote management
- Firmware upgrade via TFTP
- Configuration backup and restore
- SNMP v1, v2c, v3 support
- Syslog
- Wi-Fi Radar
- Spectrum Analyzer
- TR-069 capable

Physical and Environmental:

- Dimensions (when positioned vertically): 50 mm, 2” (W) x 198 mm, 7.8” (H) x 228 mm, 9” (D)
- Weight: 850g (1.9 lb)
- Positioning: vertical or wall-mounted
- External Power Supply Unit: 12V, 2.5A
- Operating Temperature: 0°C ~ 40°C (32°F ~ 104°F)
- Storage Temperature: -10°C ~ 70°C (14°F ~ 158°F)
- Operating Humidity: 5~90% (non-condensing)

- Storage Humidity: 5~95% (non-condensing)
- Operating Altitude: 0 to 4500 meters
- External Battery: An *optional* external battery supports continuous voice service during power outages; up to 24 hours standby, and 5 hours talk time with 1 line active. **NOTE:** Actual performance is affected by battery age and operating environment.

1.8 Default Values and Logins

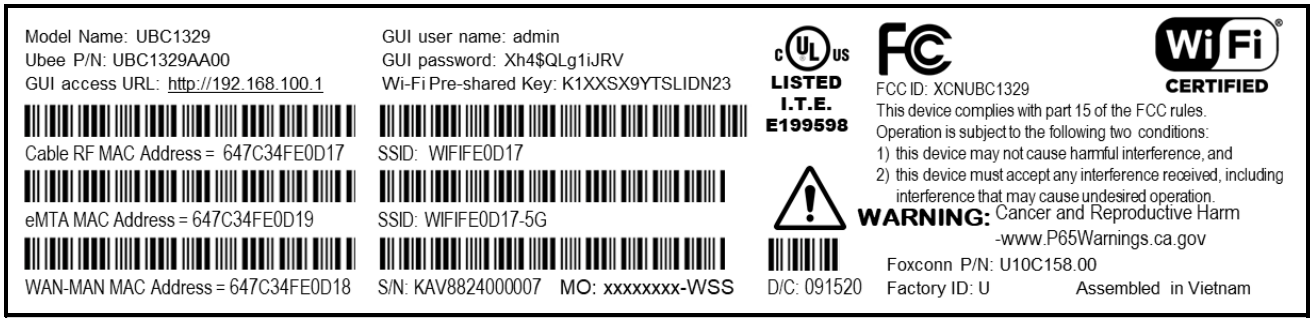
The UBC1329AA00 is configured with the default parameters for your cable service provider.

DEFAULT VALUES		
General	**Local Port Address**	192.168.100.1
	Web Interface	http://192.168.100.1
	Operation Mode	NAT Mode
	Subnet Mask	255.255.255.0
Wireless	**Encryption**	WPA2-PSK with AES for both radio bands.
	WPS PIN	WPS PIN = The WPS PIN is a randomly generated number and is used to connect wireless clients via the Wireless Protected Setup (WPS) method. • **Example WPS PIN:** 74218288 Refer to Wi-Fi Add Wi-Fi Client on page 49
	Primary Wireless Network Names (SSIDs)	"WIFI" plus the last 6 characters of the gateway's cable modem (CM) MAC address (all in upper case). "-5G" is added when the 5GHz radio band is being used. The primary SSIDs can be found on the device label. Example primary SSIDs with cable modem MAC address 64:7C:34:FE:0D:17 • **2.4GHz:** WIFIFE0D17 • **5GHz:** WIFIFE0D17-5G **NOTE:** You can change the primary network SSIDs to personalized network names. For detailed information and parameters refer to: • Wi-Fi Edit 2.4GHz on page 40 • Wi-Fi Edit 5GHz on page 45 If you change the SSID, the device does not revert to the default value when the device is power cycled, but does revert to this default value if the device is reset to factory defaults.

DEFAULT VALUES		
Wireless (cont.)	**Guest Wireless Network Names (SSIDs)**	"WIFI" plus the last 6 characters of the gateway's cable modem MAC address (all in upper case), then "-GUEST." "-5G" is added before "-GUEST" when the 5GHz radio band is being used. "-2" is added to the end for additional guest network SSIDs. Example guest SSIDs with cable modem MAC address 64:7C:34:FE:0D:17 • **2.4GHz:** WIFIFE0D17-GUEST • **5GHz:** WIFIFE0D17-5G-GUEST • **2.4GHz:** WIFIFE0D17-GUEST-2 • **5GHz:** WIFIFE0D17-5G-GUEST-2 **NOTE:** You can change the guest network SSIDs to personalized network names. The process is the same as it is for the 2.4GHz and 5GHz primary networks. Refer to: • Wi-Fi Edit 2.4GHz on page 40 • Wi-Fi Edit 5GHz on page 45 If you change the SSID, the device does not revert to the default value when the device is power cycled, but does revert to this default value if the device is reset to factory defaults.
	Wireless Passwords (WPA pre-shared keys)	WPA Pre-shared Key (PSK) = a key for each network, also called the network key or the wireless password. The default network keys are randomly generated strings, 16 characters in length. By default, there is one common pre-shared key for all the wireless networks (both 2.4GHz and 5GHz primary and guest radio bands) and can be found on the device label. • **Default PSK:** K1XXSX9YTSLIDN23 **NOTE:** You can change the PSK/wireless passwords to personalized ones. For detailed information refer to • Wi-Fi Edit 2.4GHz on page 40 • Wi-Fi Edit 5GHz on page 45
Web Interface Login	**Subscriber User Login**	**Username:** admin **Password:** Random password of 12 alpha-numeric character • **Example Password:** Xh4$QLg1iJRV The password can be found on the device label.

1.9 Device Label

The following is an example of the housing label for the UBC1329AA00. Descriptions are provided in the table below.



Label	Description
Model Name	Ubee model name/number.
Ubee P/N	Full Ubee Interactive part number.
GUI Access URL	The URL (web address) for accessing the Web user interface for the device.
GUI User Name	The user name to be entered by the subscriber when accessing the Web user interface.
GUI Password	The unique 16-character password to be entered by the subscriber when accessing the Web user interface.
Wi-Fi Pre-Shared Key	Displays the Wi-Fi pre-shared key. Also known as the network key or the wireless password.
Cable RF MAC Address	MAC (media access control) address of the RF interface of the device.
eMTA MAC Address	EMTA (embedded multimedia terminal adapter) MAC address of the device.
WAN-MAN MAC Address	MAC address of the WAN (wide area network) interface of the device.
SSID **SSID**	Displays the SSIDs for both the 2.4GHz and 5GHz radio bands. Also known as the wireless network name.
S/N	Displays the unique manufacturer serial number of the device.
MO	Displays the device internal manufacturing order (MO) number. The last 4 digits refer to the engineering version.
DC	The DC (date code) indicates the date of manufacture (in month-month, day-day, year-year format).
Foxconn P/N	Foxconn (manufacturer) part number.
Factory ID	Displays the ID of the factory in which the device was manufactured.
Assembled In	Displays the country in which the device was assembled.

2 Installing the UBC1329AA00

Use the information in this chapter to set up and connect the UBC1329AA00, connect additional devices, and troubleshoot the installation.

See the following topics:

2.1 Setting Up and Connecting the UBC1329AA00

Use the following instructions to set up and connect the UBC1329AA00. When the device is set up and connected, refer to Accessing the Web User Interface Locally on page 21 to configure the device.

IMPORTANT: You must contact your cable service provider to enable Internet access and telephony (voice). In particular, voice service requires additional steps including canceling the previous telephone provider service, porting the telephone number and other tasks to minimize downtime during the transition.

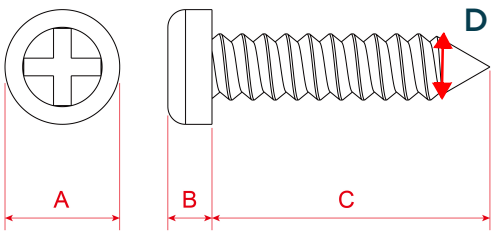
To set up the device:

1. Remove the contents from the device packaging.
2. Place the UBC1329AA00 in the best location for convenient connection to other devices, such as PCs or gaming consoles.
    - Place the UBC1329AA00 Advanced Wi-Fi 6 Voice Gateway and wireless clients in open areas far away from transformers, heavy-duty motors, microwave ovens, refrigerators, fluorescent lights, and manufacturing equipment. These items can adversely affect wireless signals. A wireless signal can become weaker after it has passed through metal, concrete, brick, walls, or floors. For additional information on wireless signals see Deploying & Troubleshooting the Wireless Network on page 93.
    - Place the device in a location that has an operating temperature of 0˚ C to 40˚ C (32˚ F to 104˚ F).

3. Power on your PC. The PC must have an Ethernet network adapter or Ethernet port and an Internet browser installed, such as Firefox or Internet Explorer. The following browsers are supported:
    - For Windows 2000, XP, Vista, Windows 10, Windows 8, Windows 7, Google Chrome, Firefox 1.07 and higher, Internet Explorer v7 and above, Netscape.
    - For MAC OS X, 10.2, and higher: Firefox 1.07 and higher, Safari 1.x and higher.
4. Connect the power adapter included in the product package to the **POWER** port on the back of the cable modem and plug the other end into the power outlet.
5. Connect the Ethernet cable included in the product package to your computer's Ethernet port. Connect the other end to one of the **ETHERNET** ports on the back panel of the UBC1329AA00.
6. Connect a coaxial cable from the **CABLE** port on the back panel of the device to the cable wall outlet, or to a cable splitter connected to the wall outlet.
7. Connect an analog telephone (if you will be using the device for telephone service) to the **TEL1** or **TEL2** port on the back panel of the device. Use an RJ-11 telephone cable.
8. Validate the network connection using the device LEDs to confirm operations.
    - The PWR, DS/US, and ONLINE LEDs are solidly lit. Refer to LED Behavior on page 6 for more information.

2.1.1 Wall Mount Installation

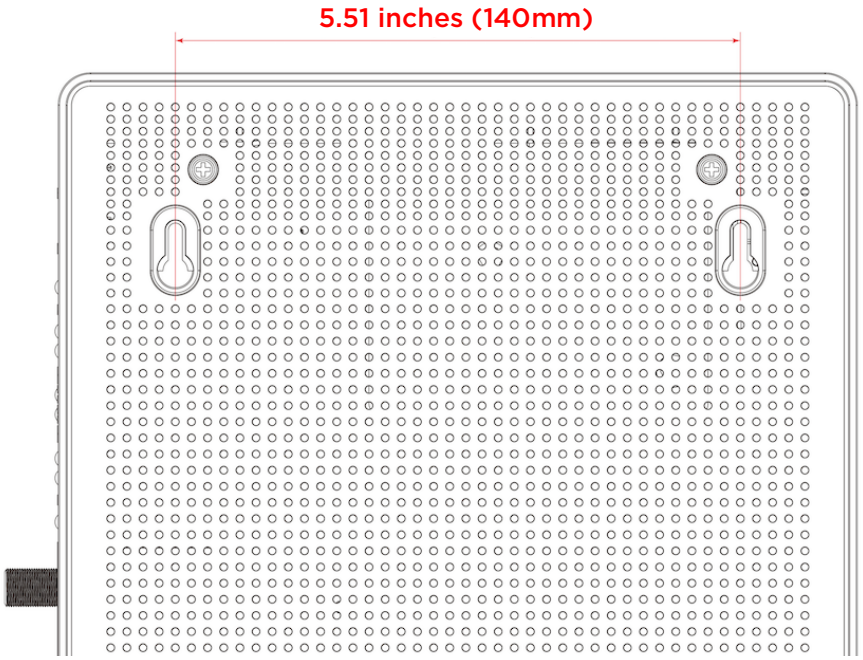
You can mount the UBC1329AA00 on a wall using the 2 mounting brackets on the side of the device. Two round or pan head screws are recommended. See the figure below.



Label	Size in Millimeters (mm)
A	7.2 +/- 0.5
B	2.6 +/- 0.15
C	19.0 +/- 1.2
D	4 - 5

To mount the UBC1329AA00 on a wall:

1. Install the two screws horizontally on a wall 5.51 inches (140mm) apart. See the figure below.



The screws should protrude from the wall so that you can fit the device between the head of the screw and the wall. If you install the screws in drywall, use hollow wall anchors to ensure the unit does not pull away from the wall due to prolonged strain from the cable and power connectors.

2. Mount the device on the wall.

2.2 Connecting Devices to the Network

Use the instructions below to connect network devices and validate device functionality.

See the following topics:

- Connecting an Ethernet Device on page 17
- Connecting a Telephone Line on page 17
- Connecting a Wireless Device on page 18

2.2.1 Connecting an Ethernet Device

You can connect up to three additional Ethernet devices to the UBC1329AA00.

To connect another Ethernet device to the network:

1. Connect an Ethernet cable from the Ethernet device (for example, a PC or gaming console) to an open **ETHERNET** port on the back of the UBC1329AA00.
2. Use the device LEDs to confirm operations. Refer to LED Behavior on page 6 for more information.
3. Open a Web browser and go to any Web site to validate network/Internet connectivity (for example, http://www.wikipedia.org).
4. If the connected device is a gaming console, perform any online task supported by the console (for example, log into the gaming server, play an online game, download content).

Refer to Troubleshooting the Installation on page 19 for troubleshooting information.

2.2.2 Connecting a Telephone Line

You can connect up to two telephone lines to the UBC1329AA00 to use the telephone (voice) features.

Voice service must be enabled by your cable service provider. Voice service requires additional steps for the service provider including canceling the previous telephone provider service, porting the telephone number, and other tasks to minimize downtime during the transition.

To connect a telephone line:

1. Connect an analog telephone to the **TEL1** or **TEL2** jack on the back panel of the UBC1329AA00 using an RJ11 telephone cable. Connect the other end to the telephone.
2. Pick up the telephone line and listen for a dial tone.
3. Make a phone call and/or have someone call you to verify a successful connection.

2.2.3 Connecting a Wireless Device

Use the following steps to connect a wireless device (client) to the UBC1329AA00 (for example a laptop computer).

Default values are found in the steps below.

To connect a wireless device:

1. Access the wireless networking feature on your wireless device, and view available wireless networks.
    - **Windows Users:** Double-click the Wireless Network Connection icon in the system tray (lower-right side of the Windows desktop). Click View Wireless Networks.

    - **Mac Users:** Click on the wireless icon (Airport) on the right side of the top menu bar. All available wireless networks will appear in the drop-down menu.

2. The UBC1329AA00 is shipped with a default SSID. The SSID is the name of the wireless network broadcast from the device so that wireless clients can connect to it.
3. Select your SSID in the wireless networks window. The default is “WIFI” plus the last 6 characters of the gateway’s cable modem MAC address (all in upper case). “-5G” is added when the 5GHz radio band is being used. The primary SSIDs can be found on the device label.

Example primary SSIDs with cable modem MAC address 64:7C:34:FE:0D:17:

- 2.4GHz: **WIFIFE0D17**
- 5GHz: **WIFIFE0D17-5G**
- **NOTES:** You can change the SSID(s) to a personalized network name. For detailed information and parameters refer to Wi-Fi Edit 2.4GHz on page 40 and Wi-Fi Edit 5GHz on page 45. If you change the SSID, the device does not revert to the default value when the device is power cycled, but does revert to this default value if the device is reset to factory defaults

4. When prompted, enter the network key, also called the pre-shared key (PSK) or the wireless password. This is a key for each device, and thew default is the same for both the 2.4 and 5GHz radios (both the primary and guest wireless networks). The default key is a randomly generated string, 16 characters in length.

   - Example PSK: **K1XXSX9YTSLIDN23**
   - **NOTE:** You can change the pre-shared key/wireless password to a personalized one for each wireless network. For detailed information and re-naming parameters refer to: Wi-Fi Edit 2.4GHz on page 40 and Wi-Fi Edit 5GHz on page 45.

5. If using WPS, enter the WPS personal identification number (PIN). The WPS PIN is a randomly-generated number and is used to connect wireless clients via the Wireless Protected Setup (WPS) method. It can be found on the WLAN WPS screen. Refer to Wi-Fi Add Wi-Fi Client on page 49.

6. Confirm connectivity by opening a Web browser on the wireless client device, and going to any Web site.

   NOTE: The Web interface allows you to customize the configurations and capabilities for the device. For a full explanation of all Web interface functions, refer to Using the Web User Interface on page 21.

7. If you have wireless issues or questions, refer to Deploying & Troubleshooting the Wireless Network on page 93.

2.3 Troubleshooting the Installation

Use the following tips to troubleshoot the installation.

1. None of the LEDs are on when I power on the UBC1329AA00.

- Check the connection between the power outlet and the power adapter. Verify the power outlet is energized and the power adapter is connected to the power outlet.
- Check the connection between the power adapter and the UBC1329AA00. Power off the unit and wait for 5 seconds and power it on again. If the problem still exists, there may be a hardware problem.

2. The ETHERNET 1-4 LEDs on the back of the modem are not lit where Ethernet cables are connected.
    - Restart the computer so that it can re-establish a connection with the UBC1329AA00.
    - Check for a resource conflict (Windows users only):
        1. Right-click My Computer on your desktop and choose Properties.
        2. Choose the Device Manager tab and look for a yellow exclamation point or red **X** over the network interface card (NIC) in the Network Adapters field. If you see either one, you may have an interrupt request (IRQ) conflict. Refer to the manufacturer's documentation or ask your service provider for further assistance.
    - Verify that TCP/IP is the default protocol for your network interface card.
    - Power cycle the UBC1329AA00 by removing the power adapter from the electrical outlet and plugging it back in. Wait for the device to re-establish communications with your cable service provider.
3. Check General Connectivity Issues:
    - If your PC is connected to another hub or gateway, connect the PC directly into an Ethernet port on the UBC1329AA00.
    - If you are using a cable splitter, remove the splitter and connect the gateway directly to the cable wall outlet. Wait for it to re-establish communications with the cable service provider.
    - Try a different cable. The Ethernet cable may be damaged.

If none of these suggestions work, contact your cable service provider for further assistance.

3 Using the Web User Interface

The Web user interface (UI) for the UBC1329AA00 is easy to access and allows you to view and configure settings for your wireless gateway device. You can validate the installation by accessing the Web user interface on the device.

3.1 Accessing the Web User Interface Locally

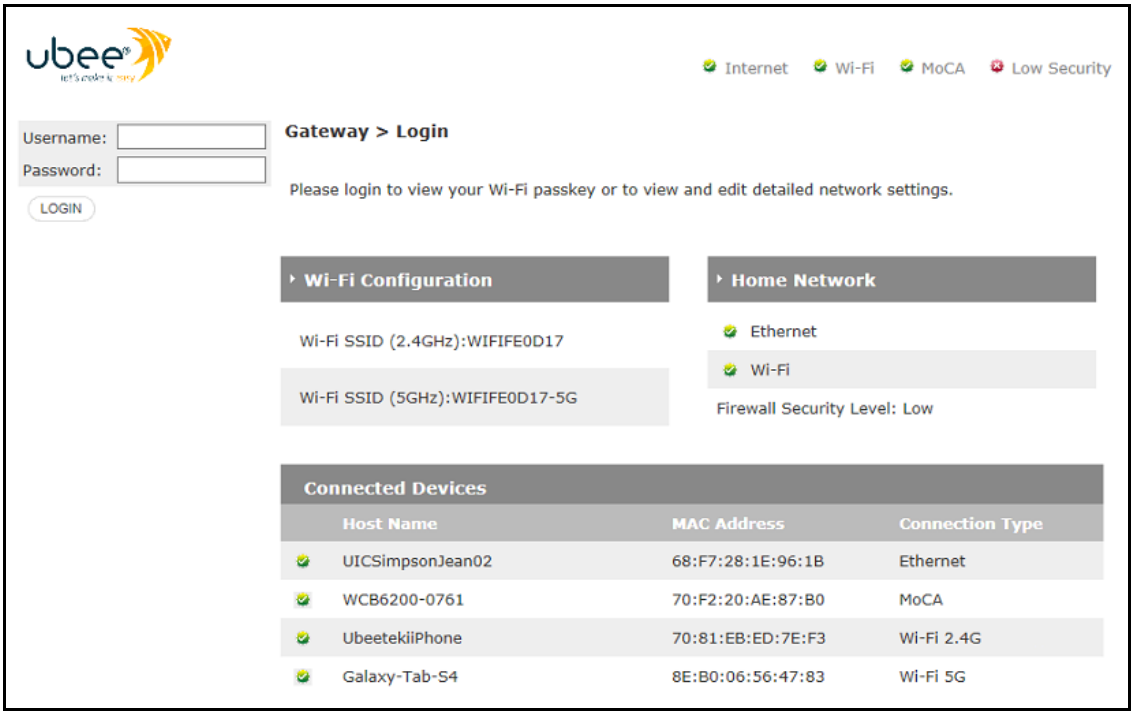
Access the Web user interface for the UBC1329AA00 from a Web browser, such as Internet Explorer on a Windows computer.

To access the Web user interface:

1. Launch an Internet browser, such as Google Chrome, from your computer.
2. Enter the following IP address in the address bar of the browser window and press the Enter key.

   http://192.168.100.1

3. The **Gateway > Login** screen appears and displays basic information about the UBC1329AA00 Advanced Wi-Fi 6 Voice Gateway.

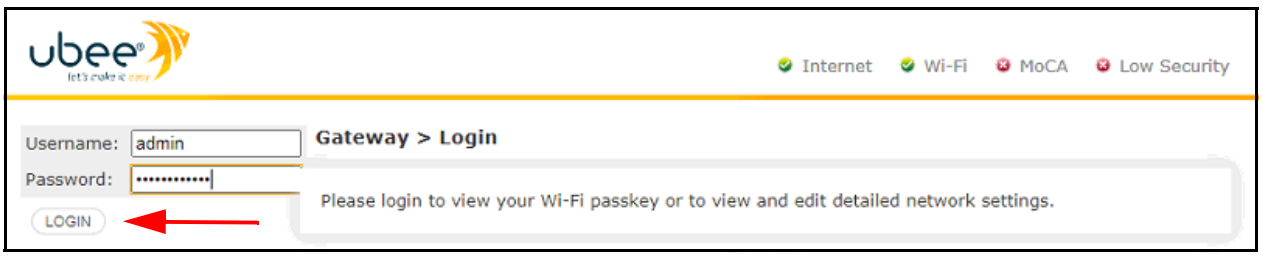


Label	Description
Wi-Fi Configuration	Shows the primary wireless radio SSIDs (wireless network names).
Home Network	Shows the current status of the network connections and displays the current firewall security level.
Connected Devices	Shows the MAC Address and connection type for each device currently connected to the UBC1329AA00 Advanced Wi-Fi 6 Voice Gateway.

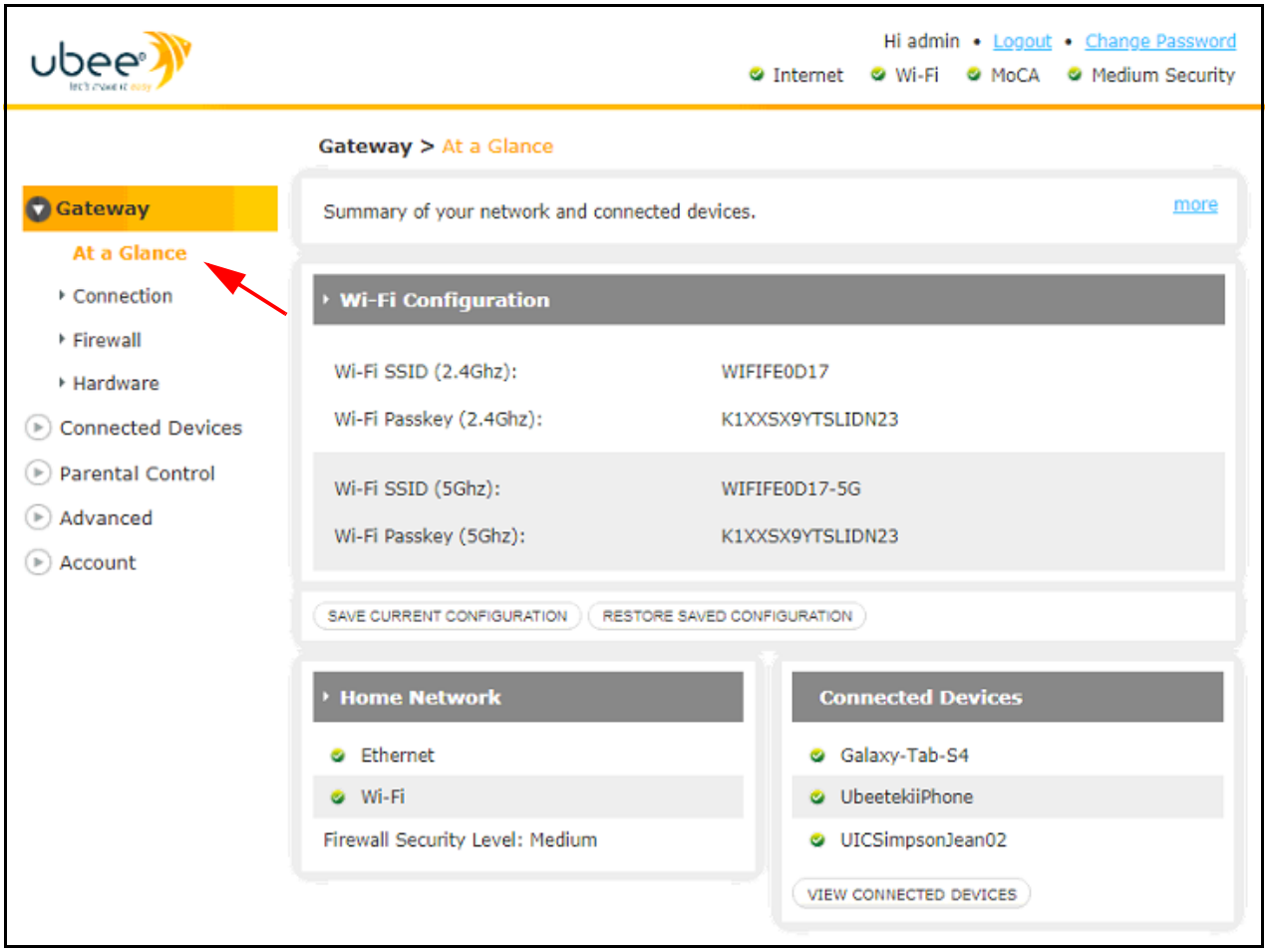
4. Enter the Username and Password and click **LOGIN**. The subscriber Web interface login is:

   Username: admin

   Password: Random password of 12 alpha-numeric characters (example: Qy8&3U77vT6F). This password can be found on the device label.



After logging in, the **Gateway > At a Glance** screen displays device status information about the UBC1329AA00. For screen field descriptions, refer to At a Glance on page 26.



3.2 Logging Out of the Web User Interface

To log out of the UBC1329AA00 web user interface, click Logout at the top right corner of the page.

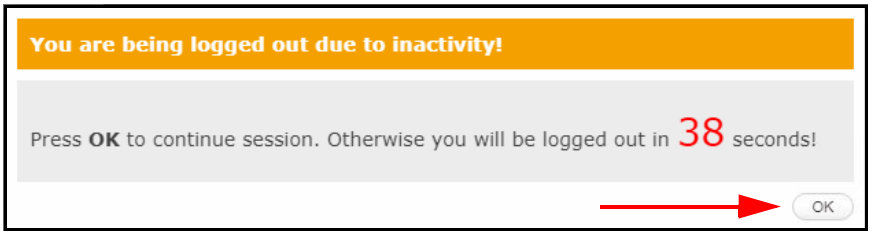
After logging out, you are returned to the **Gateway > Login** screen.

3.3 Change Password

Select Change Password at the top right of the At a Glance page if you wish to change the user login password. You will be taken to the Account > Set Password screen. See Set Password on page 91.

3.4 Inactivity Logout

For security purposes, the user will be automatically logged out of the UBC1329AA00 user interface after a specified time of inactivity. The following screen will appear when nearing inactivity logout. You have the option to continue the session by selecting **OK**.



If logged out due to inactivity, you are returned to the **Gateway > Login** screen.

4 Gateway

The **Gateway** menu displays the status of and allows configuration of the following gateway features: WAN, LAN, Wi-Fi, telephony, MoCA, firewall, hardware and software.

To access the gateway menu:

1. Access the Web user interface. Refer to Accessing the Web User Interface Locally on page 21.
2. Click **Gateway** from the left side main menu.

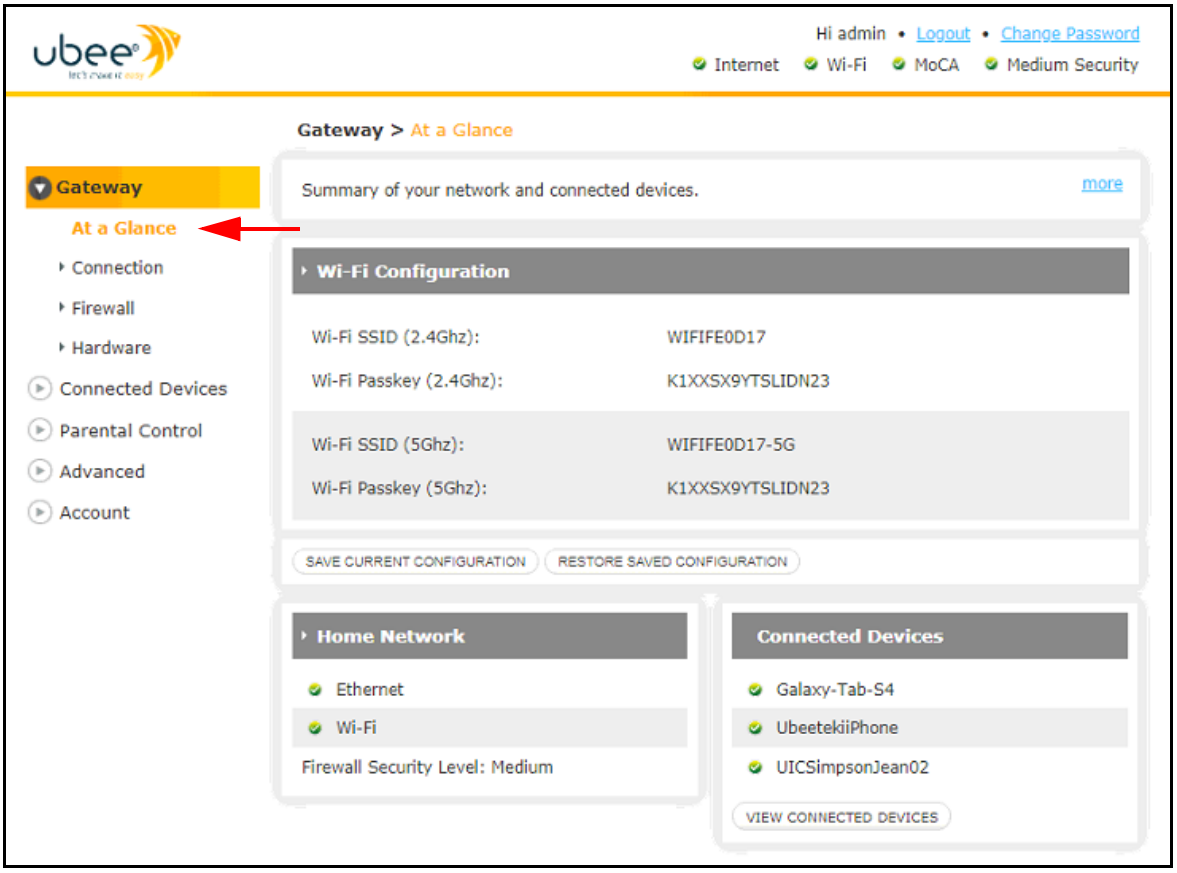
See the following topics:

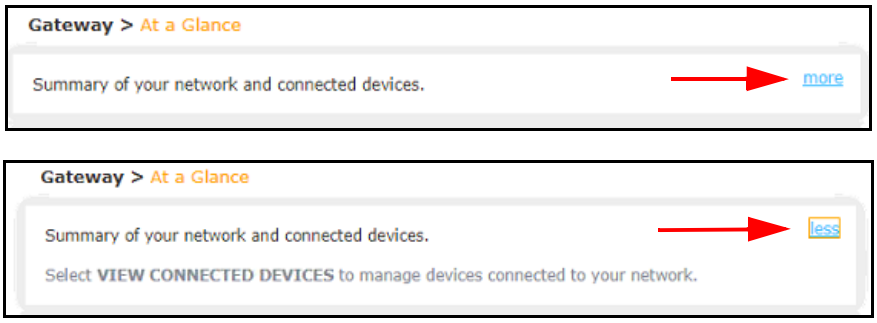
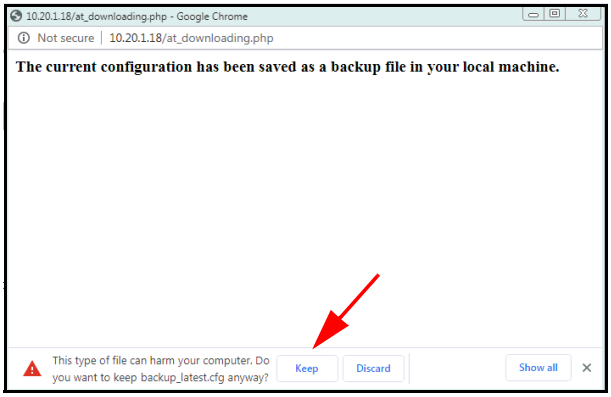
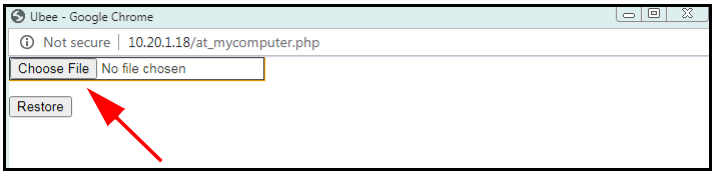
4.1 At a Glance

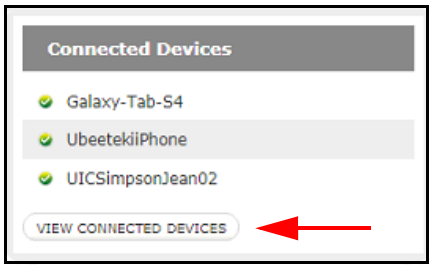
The **Gateway > At a Glance** screen displays your wireless network names, the status of your home network and connected devices.

To view device network information:

1. Click **Gateway** from the side menu.
2. Click **At a Glance** under Gateway.



Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 
Wi-Fi Configuration	Shows the wireless radio SSIDs (wireless network names) and wireless passwords for both the 2.4GHz and 5GHz radios bands.
Save Current Configuration	This allows you to back up and save your current gateway configuration. Select **Save Current Configuration**:  The following screen appears. Select **Keep** to save the configuration. It will be saved to your Downloads folder and will be titled *'backup_latest.cfg'*. 
Restore Saved Configuration	To restore the UBC1329AA00 to a previously saved configuration, Select **Restore Saved Configuration**:  The file upload dialog box appears. Select **Choose File**.  Select the previously saved configuration (by default, files are saved to the Downloads folder titled *'backup_latest.cfg'*) and restore the gateway.

Label	Description
Home Network	Shows the current status of the network connections (Ethernet and Wi-Fi) and displays the current firewall security level.
Connected Devices	Displays the name(s) of all devices currently connected to the gateway.
View Connected Devices	Select **View Connected Devices** to see details about any devices currently connected to the UBC1329AA00.  You will be taken to the **Connected Devices > Devices** screen. Please refer to Edit Device on page 67 for a screenshot and definitions.

4.2 Connection

The **Connection** menu allows you to view and manage the settings for your local and WAN (Wide Area Network) IP networks and your Wi-Fi network.

To view and manage network settings:

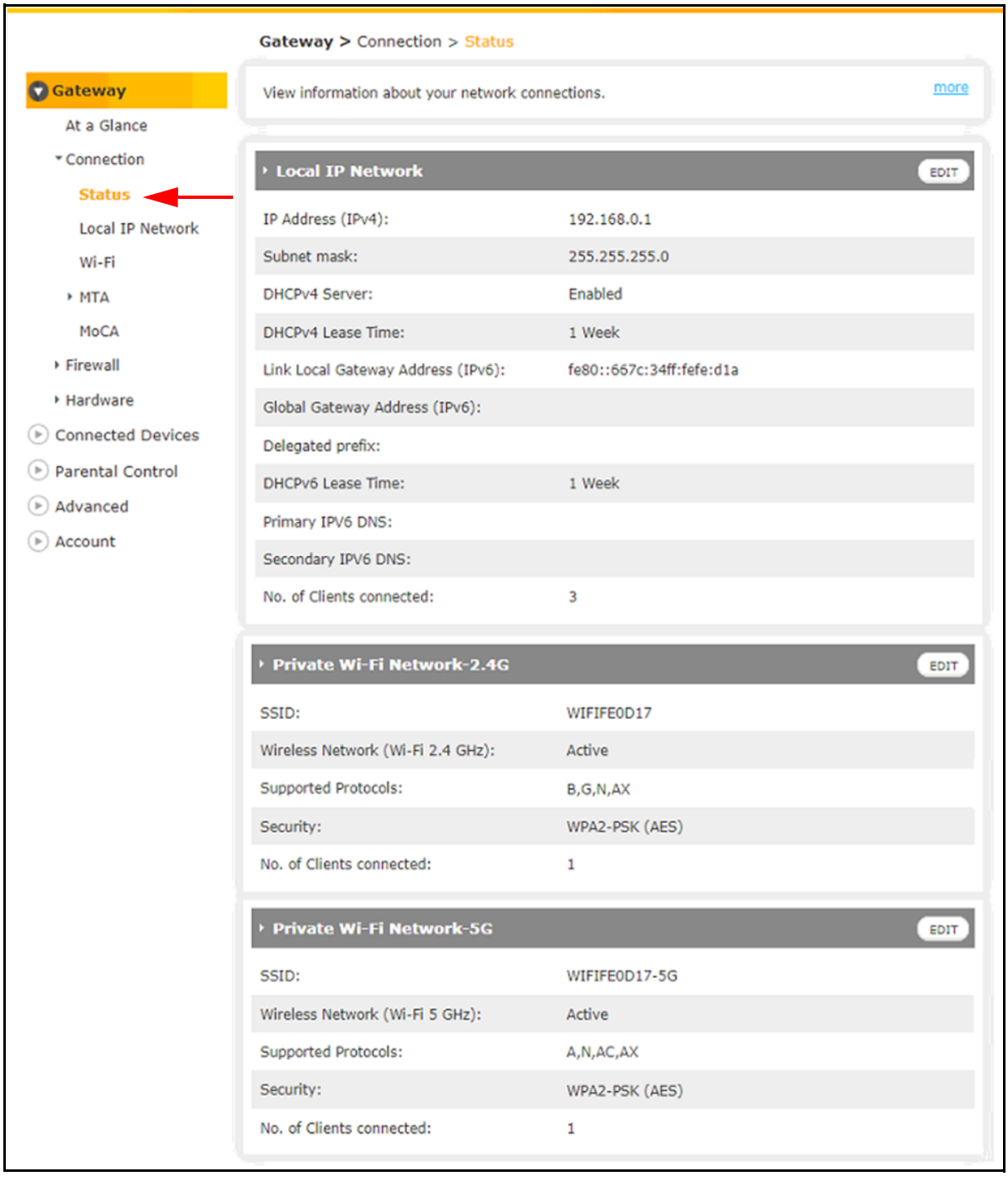
1. Click **Gateway** from the main menu.
2. Click **Connection** under Gateway.

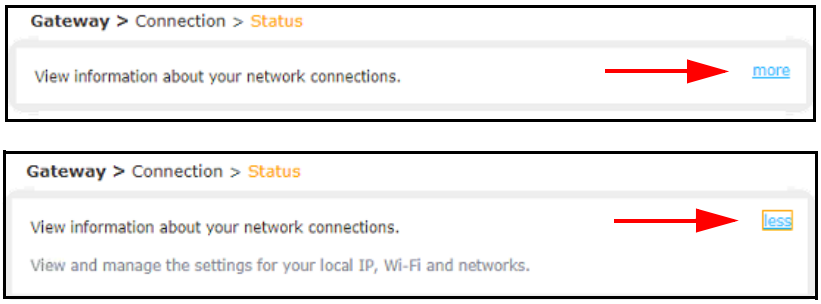
See the following Topics:

- Status on page 29
- Local IP Network on page 32
- Wi-Fi on page 35

4.2.1 Status

The **Connection > Status** page displays current information about the network connections of the UBC1329AA00 Advanced Wi-Fi 6 Voice Gateway (local IP network, 2.4 and 5GHz wireless networks).

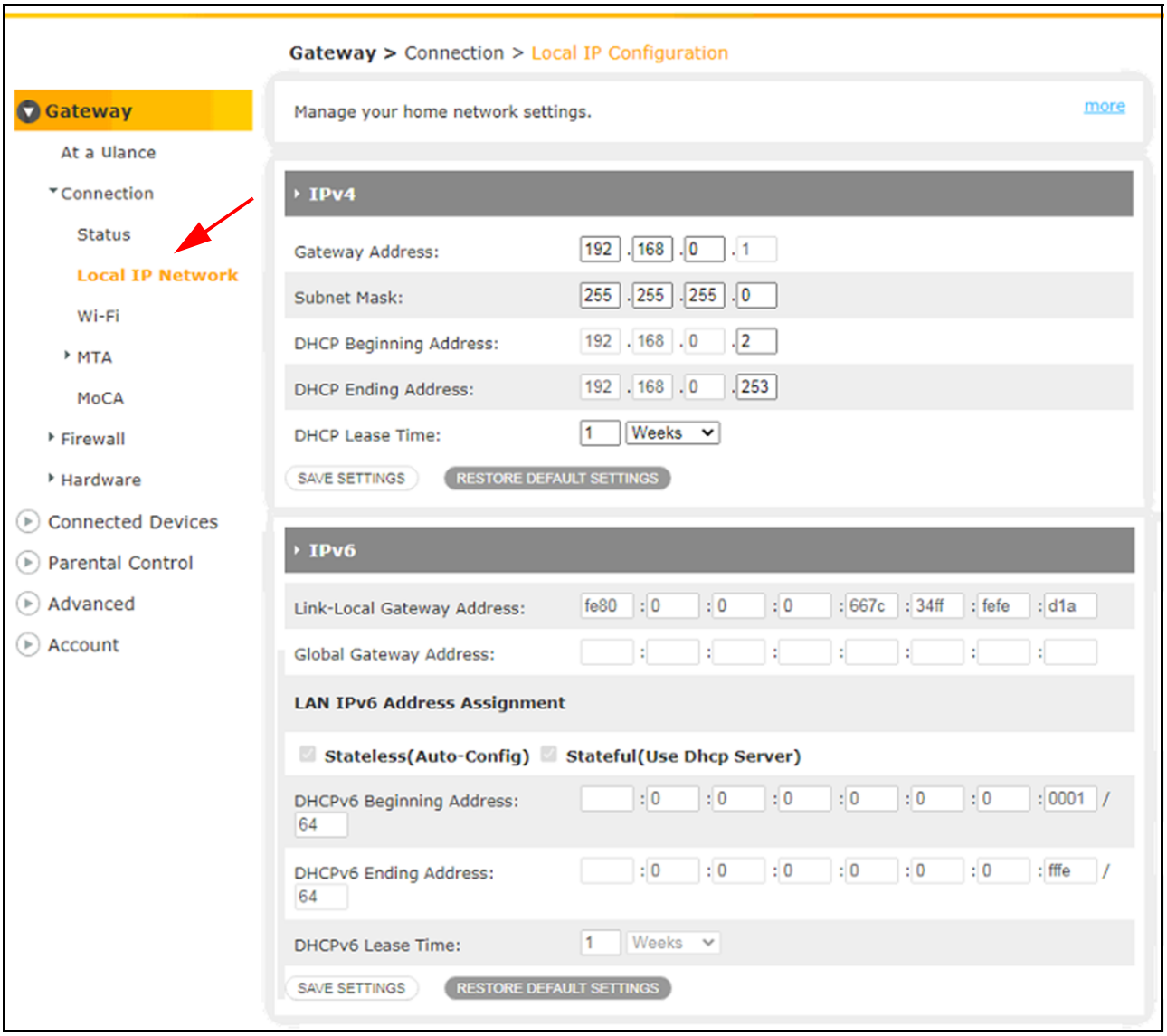


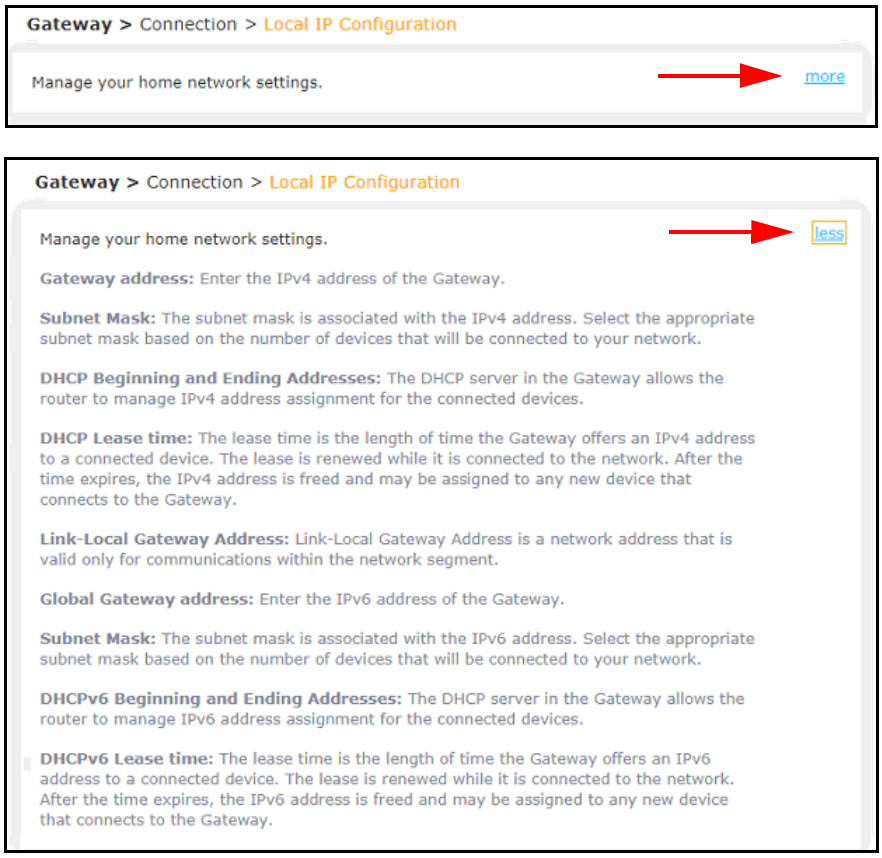
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 
Local IP Network	
EDIT	When you click the **EDIT** button, you are taken to the Local IP Network Configuration screen. Refer to Local IP Network on page 32. 
IP Address (IPv4)	Displays the IPv4 address of the local interface.
Subnet Mask	The IP subnet mask for the local interface.
DHCPv4 Server	Shows whether the DHCPv4 (Dynamic Host Configuration Protocol IPv4 version) Server is Enabled or Disabled.
DHCPv4 Lease Time	Displays the current DHCPv4 lease time, which is the duration of time before the device must connect to the DHCPv4 server and be issued a new, unused IP address.
Link Local Gateway Address (IPV6)	Link local gateway addresses, always beginning with 'FE', are limited only to the local network and cannot be routed to public networks.
Global Gateway Address (IPv6)	Displays the IPv6 address of the local interface.
Delegated Prefix	Displays the delegated prefix, if one is being used. The delegated prefix feature allows a DHCP server to assign prefixes chosen from a global pool to DHCP clients.
DHCPv6 Lease Time	Displays the current DHCPv6 lease time, which is the duration of time before the device must connect to the DHCPv6 server and be issued a new, unused IP address.
Primary IPv6 DNS	Displays the IPv6 address of the primary DNS server, if enabled.
Secondary IPv6 DNS	Displays the IPv6 address of the secondary DNS server, if enabled.
No. of Clients Connected	Shows how many clients are currently connected via the local LAN interfaces.
Private Wi-Fi Network - 2.4G	

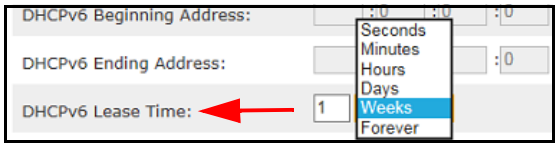
Label	Description
EDIT	When you click the **EDIT** button, you are taken to the Wi-Fi Edit 2.4GHz page. Refer to Wi-Fi Edit 2.4GHz on page 40. 
SSID	Displays the primary wireless network name (SSID) for the 2.4GHz radio band to which client devices connect. It displays the default SSID unless you have changed the SSID to a personalized one. The default SSID is "Wi-Fi" plus the last 6 characters of the gateway's cable modem MAC address (all in upper case). The default SSIDs can be found on the device label.
Wireless Network (Wi-Fi 2.4GHz)	Displays whether the 2.4GHz wireless network is active or not.
Supported Protocols	Displays the supported 802.11 wireless networking standards. 802.11b/g/n/ax are supported on the 2.4GHz radio band.
Security	Shows which security mode is currently in use.
No. of Clients Connected	Shows the number of wireless clients currently connected to the 2.4GHz Wi-Fi network.
Private Wi-Fi Network - 5G	
EDIT	When you click the **EDIT** button, you are taken to the Wi-Fi Edit 5GHz page. Refer to Wi-Fi Edit 5GHz on page 45. 
SSID	Displays the primary wireless network name (SSID) for the 5GHz radio band to which client devices connect. It displays the default SSID unless you have changed the SSID to a personalized one. The default SSID is "Wi-Fi" plus the last 6 characters of the gateway's cable modem MAC address (all in upper case), then "-5G" is added to denote the 5GHz band. The default SSIDs can be found on the device label.
Wireless Network (Wi-Fi 5GHz)	Displays whether the 5GHz wireless network is active or not.
Supported Protocols	Displays the supported 802.11 wireless networking standards. 802.11a/n/ac/ax are supported on the 5Hz radio band.
Security	Shows which security mode is currently in use.
No. of Clients Connected	Shows the number of wireless clients currently connected to the 5GHz Wi-Fi network.

4.2.2 Local IP Network

The **Connection > Local IP Network** page allows you to manage your local (home) network settings.



Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 
IPv4	
Gateway Address	Enter the IPv4 address of the gateway.
Subnet Mask	Enter the subnet mask associated with the IPv4 address.
DHCP Beginning Address	Enter the ***beginning*** IPv4 address in the pool of addresses that can be used by connecting clients.
DHCP Ending Address	Enter the ***ending*** IPv4 address in the pool of addresses that can be used by connecting clients.
DHCP Lease Time	DHCP lease time is the duration of time the gateway 'leases' an IP address to a connected client device. When the lease expires, the client device must connect to the DHCP server and be issued a new IP address. Enter a number (3 digits maximum) in the space provided and then select the time duration from the drop down menu. Options are: Seconds, Minutes, Hours, Days, Weeks and Forever. 

Label	Description
Save Settings	Select to save IPv4 configuration changes.
Restore Default Settings	Select to restore the factory default IPv4 settings.
IPv6	
Link-Local Gateway Address	Enter the link local gateway address, which is a network address that is valid only for communication within the local network segment.
Global Gateway Address	Enter the IPv6 address of the gateway.
LAN IPv6 Address Assignment	Select the preferred method of IPv6 address assignment. Choices are: • **Stateless (Auto-Config):** allows the client device to self-configure its own IPv6 address and routing based on the router advertisements. If stateless is selected, the address and lease time fields below are not active. • **Stateful (Use DHCP Server):** requires a DHCPv6 server to provide the IPv6 address to the client device and that both the client device and the server maintain, or keep track of, the 'state' of the address (such as lease time). **NOTE:** When stateful address assignment is selected, the address fields and lease time fields below can be configures.
DHCPv6 Beginning Address	Enter the ***beginning*** IPv6 address in the pool of addresses that can be used by connecting clients.
DHCPv6 Ending Address	Enter the ***ending*** IPv6 address in the pool of addresses that can be used by connecting clients.
DHCPv6 Lease Time	DHCPv6 lease time is the duration of time the gateway 'leases' an IPv6 address to a connected client device. When the lease expires, the client device must connect to the DHCP server and be issued a new IP address. Enter a number (3 digits maximum) in the space provided and then select the time duration from the drop down menu. Options are: Seconds, Minutes, Hours, Days, Weeks and Forever. 
Save Settings	Select to save IPv6 configuration changes.
Restore Default Settings	Select to restore the factory default IPv6 settings.

4.2.3 Wi-Fi

The **Connection > Wi-Fi** page allows you to manage and configure wireless network settings.

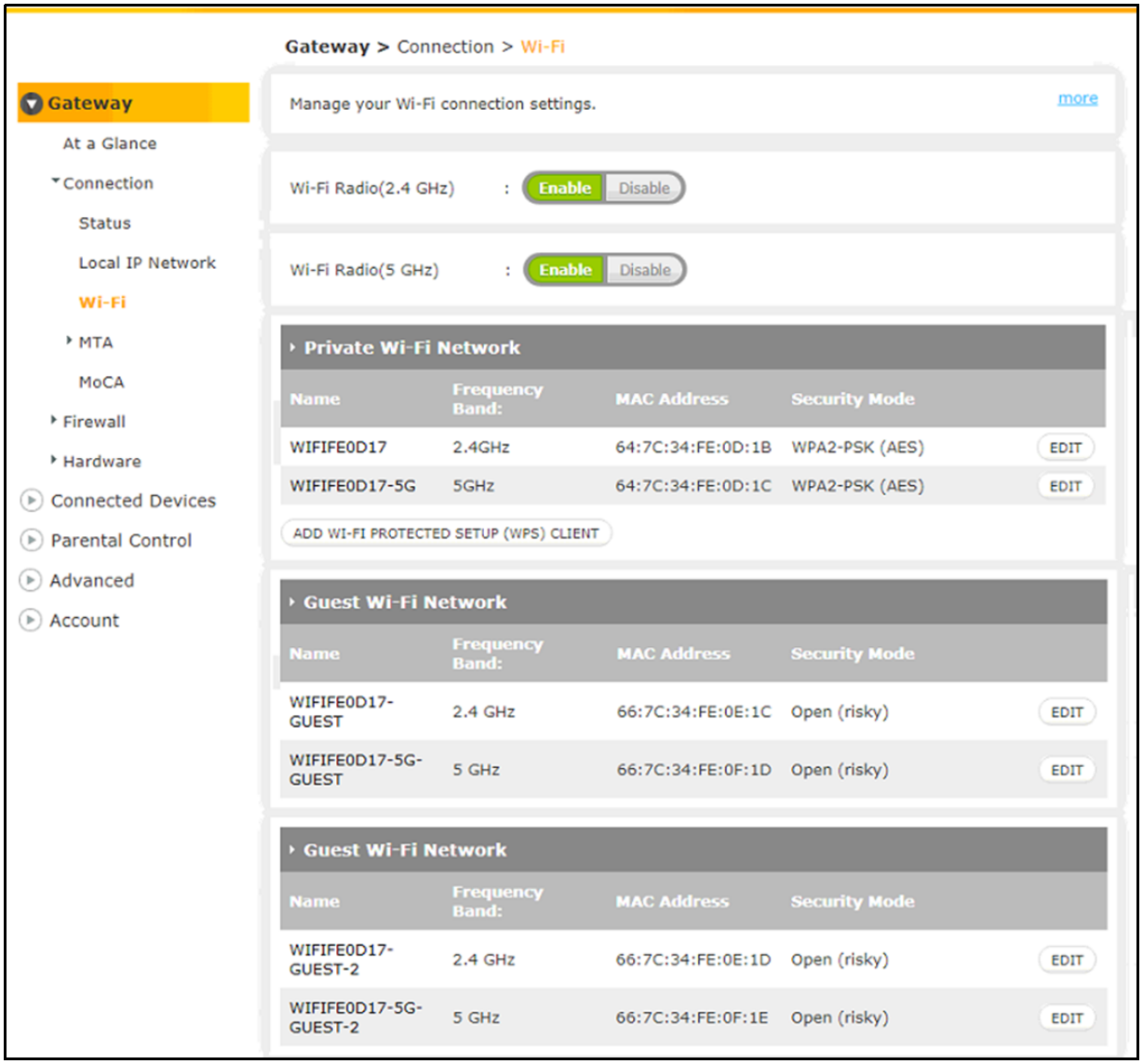
NOTE: *The Wi-Fi screen provides a large amount of information so it will be presented in 2 separate screen shots.*

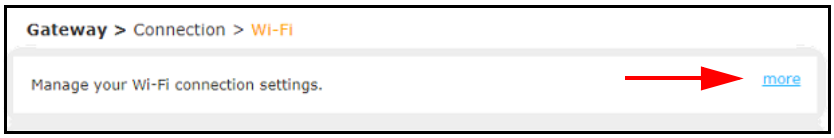
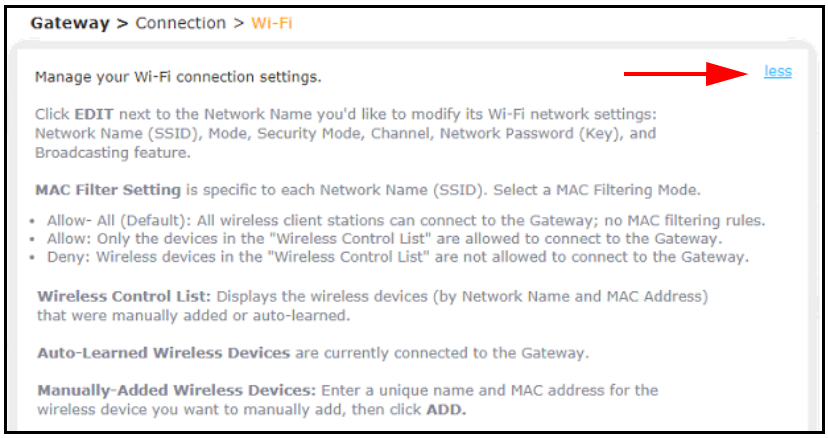
See the following topics:

- Wi-Fi on page 35
- Wi-Fi Edit 2.4GHz on page 40
- Wi-Fi Edit 5GHz on page 45
- Wi-Fi Add Wi-Fi Client on page 49

Wi-Fi Screen #1

- **Private Wi-Fi Network & Guest Wi-Fi Networks**

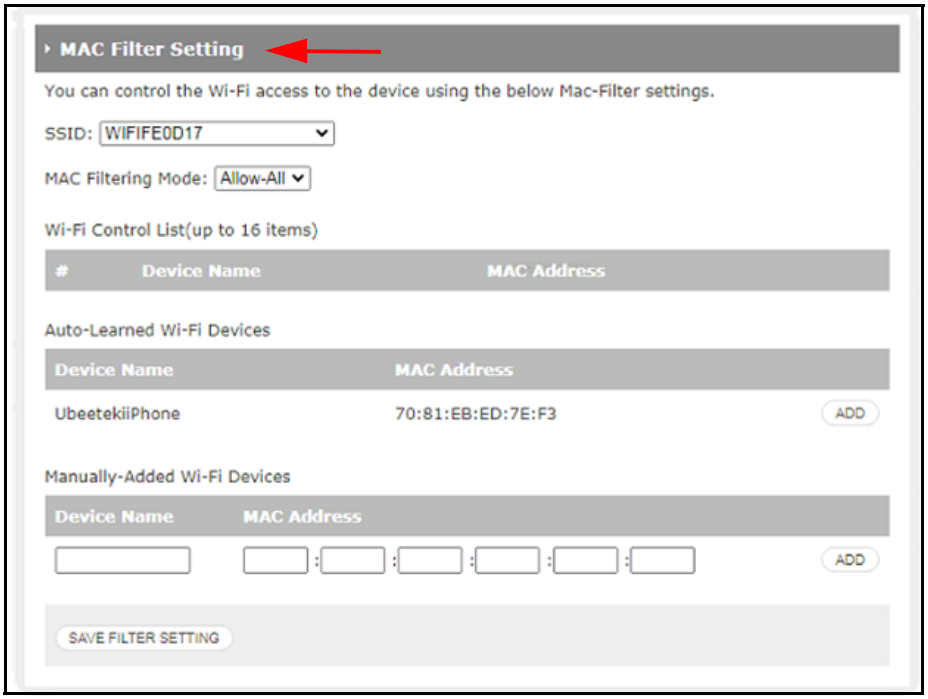


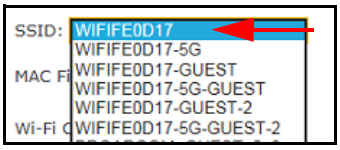
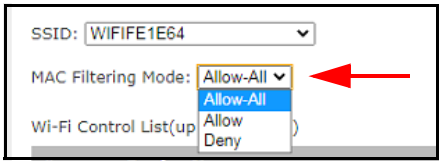
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.  
Wi-Fi Radio (2.4GHz)	Select Enable or Disable for the 2.4GHz wireless radio band.
Wi-Fi Radio (5GHz)	Select Enable or Disable for the 5GHz wireless radio band.
Private Wi-Fi Network	
Name	This field displays the wireless network name, also called the SSID (service set identifier) for the primary 2.4GHz and 5GHz radios. The wireless network name will appear in the list of available wireless networks for the client device wishing to connect. The default wireless network names are listed here, and are defined as follows: "WIFI" plus the last 6 characters of the gateway's cable modem (CM) MAC address (all in upper case). "-5G" is added when the 5GHz radio band is being used. The primary SSIDs can be found on the device label. Example primary SSIDs with cable modem MAC address 64:7C:34:FE:0D:17 • **2.4GHz:** WIFIFE0D17 • **5GHz:** WIFIFE0D17-5G **NOTE:** You can change the primary network names to personalized ones. For instructions refer to • Wi-Fi Edit 2.4GHz on page 40 • Wi-Fi Edit 5GHz on page 45 If you change the SSID, the device does not revert to the default value when the device is power cycled, but does revert to this default value if the device is reset to factory defaults.
Frequency Band	Lists the radio frequency band, 2.4GHz or 5GHz.
MAC Address	Displays the wireless MAC addresses for each wireless interface.
Security Mode	Displays the current security mode in use for each wireless band.

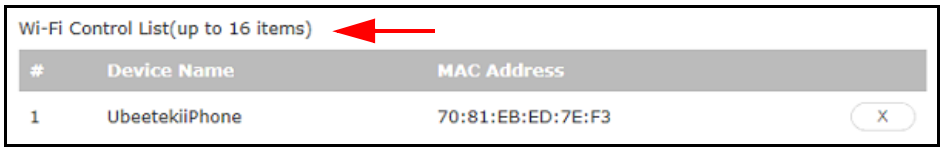
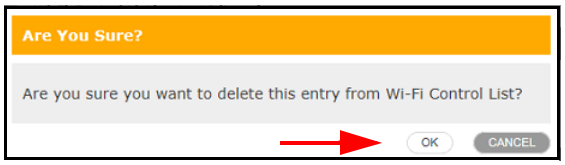
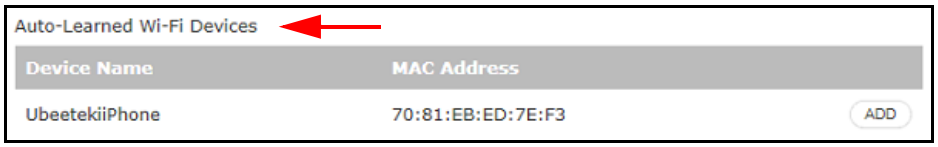
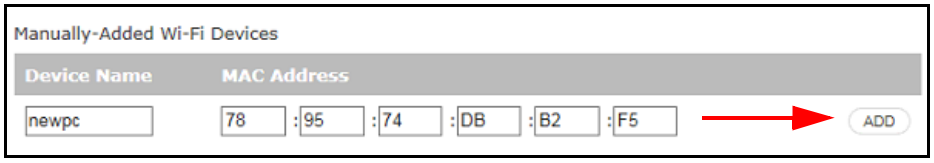
Label	Description
EDIT	Select **EDIT** next to the wireless network you want to configure. You will be taken to the Private Wi-Fi Network Configuration page for the radio band where you can configure wireless network name, security mode and wireless password. Refer to: • Wi-Fi Edit 2.4GHz on page 40 • Wi-Fi Edit 5GHz on page 45
Add Wi-Fi Protected Setup (WPS) Client	Click here to be taken to the Wireless Protected Setup (WPS) page, where you can enable WPS, select the connection method and simplify connection to your wireless network. Refer to Wi-Fi Add Wi-Fi Client on page 49.
Guest Wi-Fi Networks	
Name	This field displays the wireless network name, also called the SSID (service set identifier) for the GUEST 2.4GHz and 5GHz radios. The wireless network name will appear in the list of available wireless networks for the client device wishing to connect. The default wireless guest network names are listed here, and are defined as follows: "WIFI" plus the last 6 characters of the gateway's cable modem MAC address (all in upper case), then "-GUEST." "-5G" is added before "-GUEST" when the 5GHz radio band is being used. "-2" is added to the end for additional guest network SSIDs. Example guest SSIDs with cable modem MAC address 64:7C:34:FE:0D:17 • **2.4GHz:** WIFIFE0D17-GUEST • **5GHz:** WIFIFE0D17-5G-GUEST • **2.4GHz:** WIFIFE0D17-GUEST-2 • **5GHz:** WIFIFE0D17-5G-GUEST-2 **NOTE:** You can change the guest network SSIDs to personalized network names. The process is the same as it is for the 2.4GHz and 5GHz primary networks. Refer to: • Wi-Fi Edit 2.4GHz on page 40 • Wi-Fi Edit 5GHz on page 45 If you change the SSID, the device does not revert to the default value when the device is power cycled, but does revert to this default value if the device is reset to factory defaults.
Frequency Band	Lists the radio frequency band, 2.4GHz or 5GHz.
MAC Address	Displays the wireless MAC addresses for each wireless interface.
Security Mode	Displays the current security mode in use for each wireless band.
EDIT	Select **EDIT** next to the guest wireless network you want to configure. You will be taken to the Guest Wi-Fi Network Configuration page for the 2.4GHz radio band where you can configure wireless network name, security mode and wireless password. Refer to Wi-Fi Add Wi-Fi Client on page 49.

Wi-Fi Screen #2

- **MAC Filter Settings**

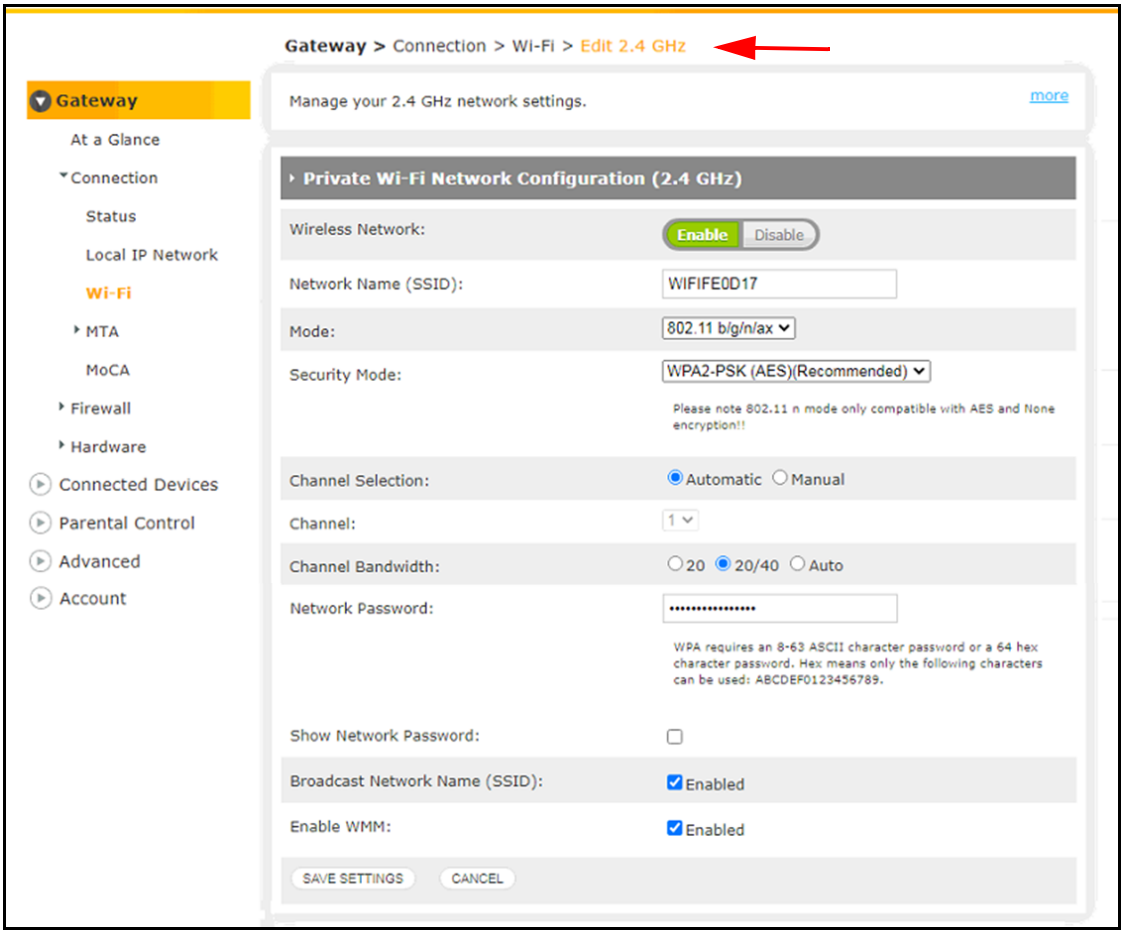


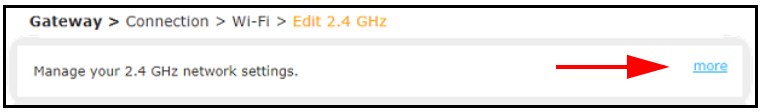
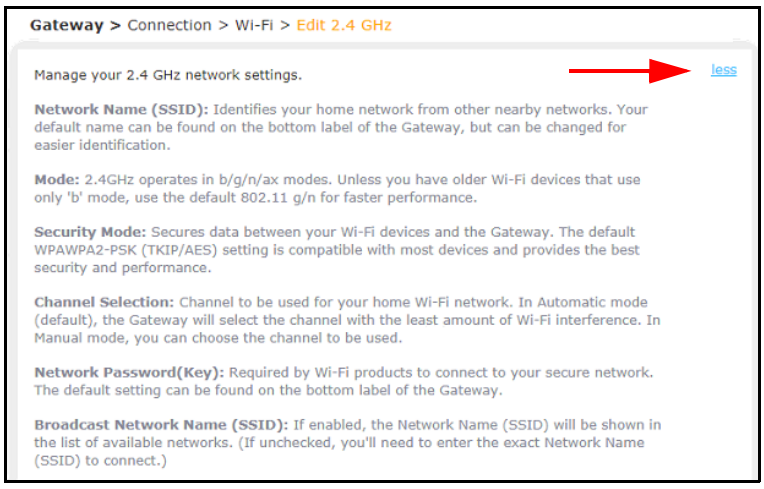
Label	Description
MAC Filter Setting	
SSID	From the drop down menu, select the SSID (wireless network) for which you want to configure MAC filter settings. 
MAC Filtering Mode	MAC filtering allows you to create a list of devices and only allow those devices on your network. Select the appropriate MAC Filtering Mode from the drop down menu. Options are: • **Allow All:** All wireless clients are allowed on the network. • **Allow:** Wireless clients added to the Wi-Fi Control List are allowed on the network. All other wireless clients are blocked. • **Deny:** Wireless clients added to the Wi-Fi Control List are blocked access to the network. All other wireless clients are allowed access. 

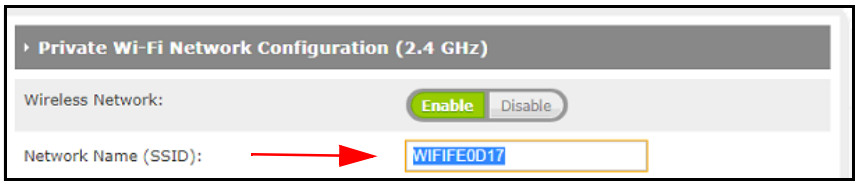
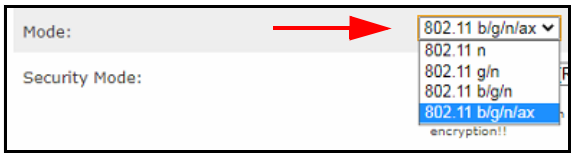
Label	Description
Wi-Fi Control List	The Wi-Fi Control List displays the device name and MAC address for devices that have been added to the MAC filtering list (by either manual addition or auto-learning). Devices on this list will be affected according to the filtering mode selected.  Click on the **X** to delete a device from the Wi-Fi control list. A warning box will appear and confirm you wish to delete. Press OK. 
Auto-Learned Wi-Fi Devices	Devices that are or were recently connected to the UBC1329AA00 will appear in the auto-learned Wi-Fi devices list. To add a recently connected device to the Wi-Fi control list, locate the device in the list and click **ADD**. 
Manually-Added Wi-Fi Devices	You can manually add a device to the Wi-Fi Control List by entering the device name and MAC address. Enter the required information and click **ADD**. 
Save Filter Setting	Select to save all MAC filtering configuration.

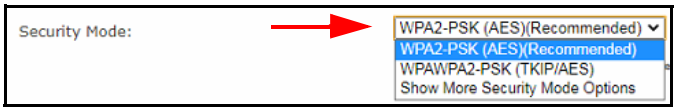
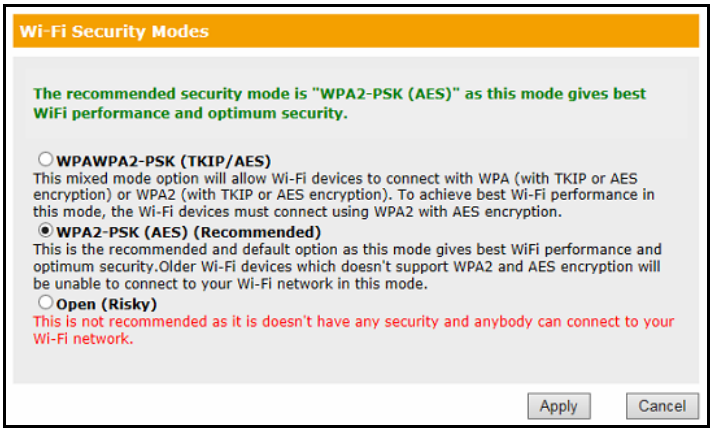
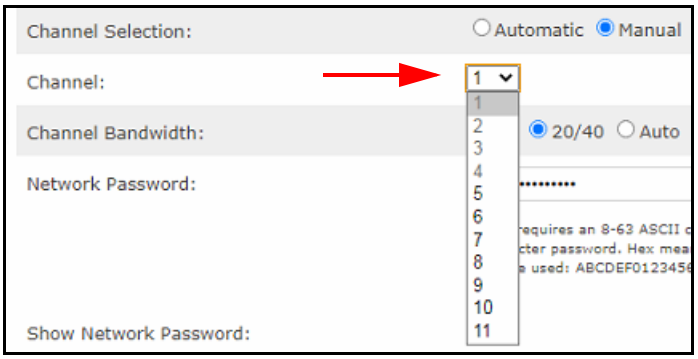
4.2.4 Wi-Fi Edit 2.4GHz

The **Wi-Fi > Edit 2.4GHz** page allows configuration of the 2.4GHz wireless radio settings, including personalizing the SSID (network name) and network password.

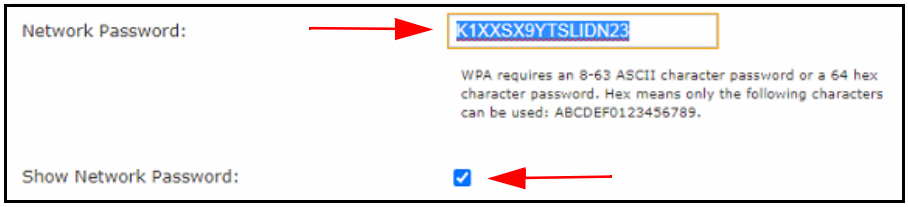
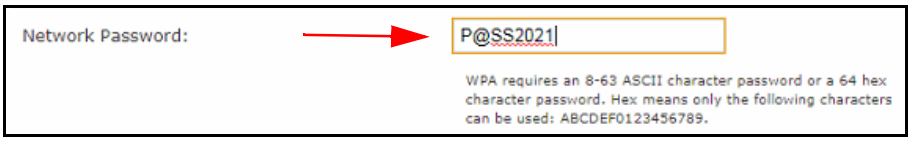


Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.  

Label	Description
Private Wi-Fi Network Configuration (2.4GHz)	
Wireless Network	Select **Enable** to turn on the 2.4GHz network, or select **Disable** to turn it off.
Network Name (SSID)	This field displays the wireless network name, also called the SSID (service set identifier) for the primary 2.4GHz radio. The wireless network name will appear in the list of available wireless networks for the client device wishing to connect. The default wireless network name for the 2.4GHz network is defined as follows: "WiFi" plus the last 6 characters of the gateway's cable modem (CM) MAC address (all in upper case). **Changing the Wireless Network Name:** You can change the primary network name to a personalized one. Highlight the old SSID and delete.  Enter your personalized network name and then click **Save Settings** at the bottom of the page.  **NOTE:** If you change the SSID, the device does not revert to the default value when the device is power cycled, but does revert to this default value if the device is reset to factory defaults.
Mode	Select the wireless networking standard (802.11 mode) to use. Only wireless clients that support the networking protocol(s) you select are able to connect to the wireless network. Available choices for the 2.4GHz radio are: 802.11n, 802.11g/n, 802.11b/g/n and 802.11b/g/n/ax (ax is Wi-Fi 6). 

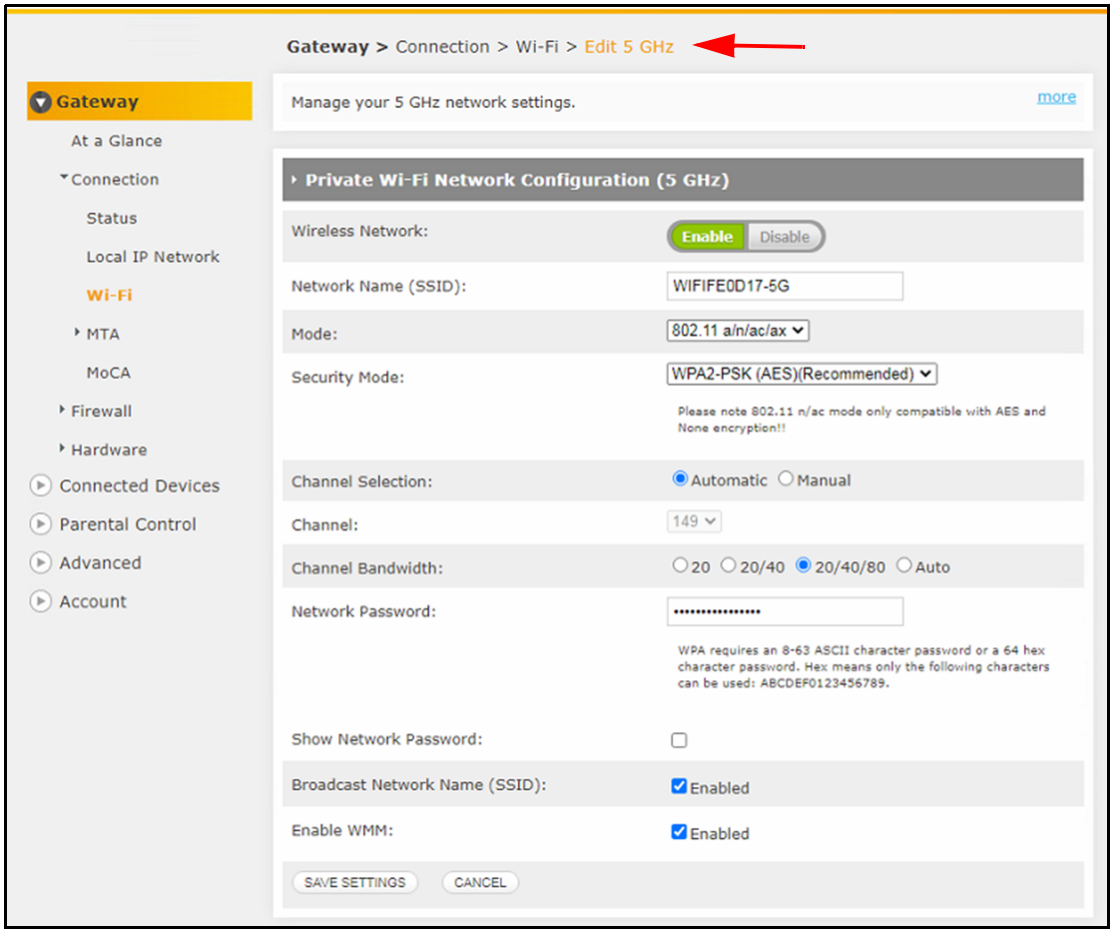
Label	Description
Security Mode	Select the desired wireless security mode from the drop down menu.  When you select **'Show More Security Mode Options'** the following screen appears with important security information. 
Channel Selection	Select **Automatic** if you want the UBC1329AA00 to automatically choose the best channel to use based on the environment where it is installed. Automatic is generally reccommended because it allows the gateway to continually scan the environment and select the best channel. Select **Manual** if you want to be able to select the channel yourself. When Manual is selected, the **Channel** drop down menu becomes editable. 
Channel	When **Manual** channel selection is chosen, you are able to select your preferred channel from the drop down menu. Options for the 2.4GHz network are: 1-11. 

<table>
<tr><th>Label</th><th>Description</th></tr>
<tr><td>Channel Bandwidth</td><td>The 802.11n specification provides a 40MHz-wide channel in addition to the legacy 20MHz-wide channel available with older wireless specifications. Options for the 2.4GHz network are:
20: Set to 20 to restrict use to a 20MHz channel only.
20/40: Set to 20/40 to enable use of the 40MHz channel. Note that this enables higher data rates, but only clients supporting 802.11n/ac may connect.
Auto: Selecting Auto will let the UBC1329AA00 select the proper channel width based on local usage, interference and traffic. It selects the channel on boot-up, and does not change until a reboot/power cycle of the device. 
</td></tr>
<tr><td>Network Password

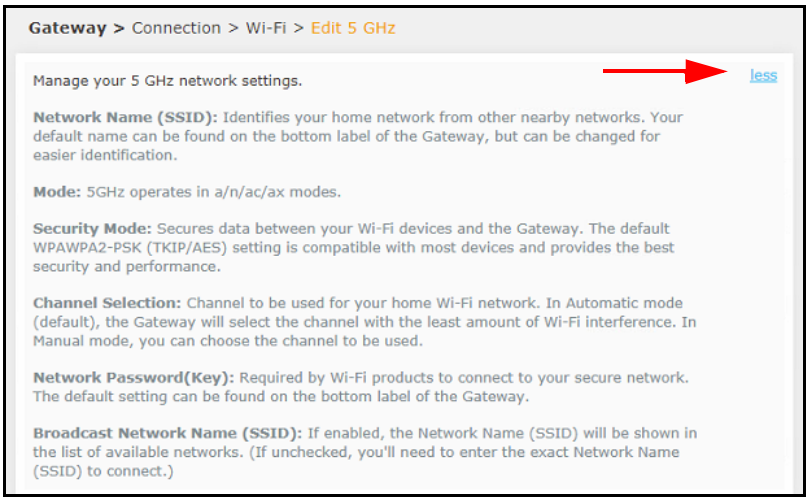
Show Network Password</td><td>The current wireless network password is displayed here. Click the Show Network Password box to be able to read the password, otherwise it is displayed in dots.
Changing the Wireless Password:
You can change the wireless password to a personalized one.
Highlight the old password and delete it. 
<ol start="2">
Check the Show Network Password box to be able to read the password.
Enter your personalized network password and then click Save Settings at the bottom of the page. 
</td></tr>
<tr><td>Broadcast Network Name</td><td>When enabled, the SSID, or network name, is visible to wireless clients wishing to connect to the UBC1329AA00. When not enabled, the SSID will not be visible for connection.</td></tr>
<tr><td>Enable WMM</td><td>Check the box to enable WMM (Wi-Fi Multimedia). WMM controls WLAN transmission priority on packets transmitted over the wireless network to ensure quality of serive in your wireless network.
NOTE: Disabling WMM will break the 802.11n specification and result in speeds that tend toward a maximum speed of 54Mbps (802.11g max speeds).</td></tr>
<tr><td>Save Settings</td><td>Select to save the 2.4GHz wireless configuration.</td></tr>
<tr><td>Cancel</td><td>Select to cancel the 2.4GHz wireless configuration.</td></tr>
</table>

4.2.5 Wi-Fi Edit 5GHz

The **Wi-Fi > Edit 5GHz** page allows configuration of the 5GHz wireless radio settings, including personalizing the SSID (network name) and network password.

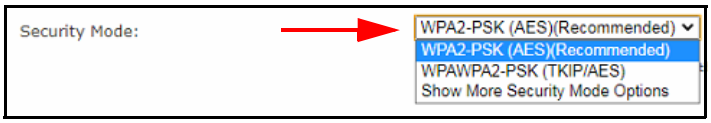
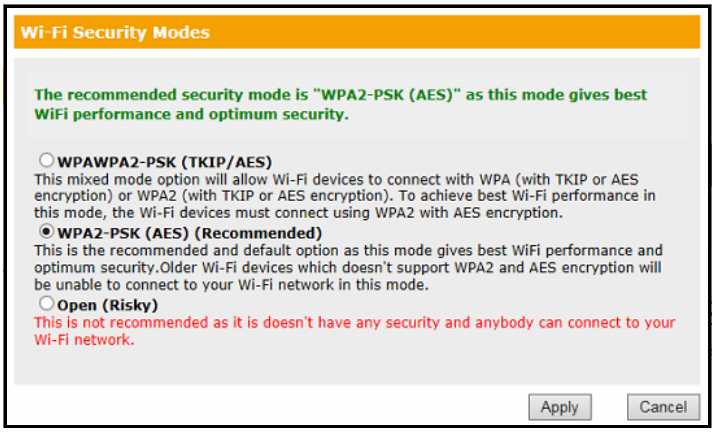


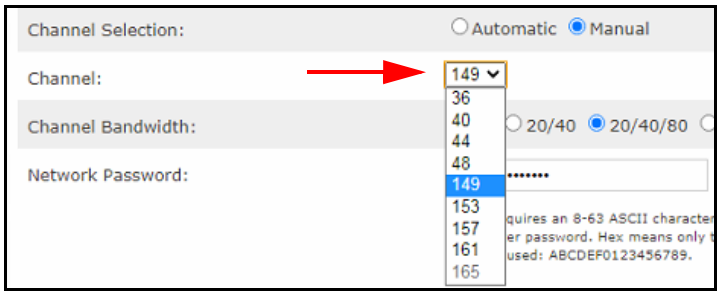
<table>
<tr><th>Label</th><th>Description</th></tr>
<tr><td>More</td><td>When you click on more, a description of the screen information is shown. Click less to shrink the description box again.
 

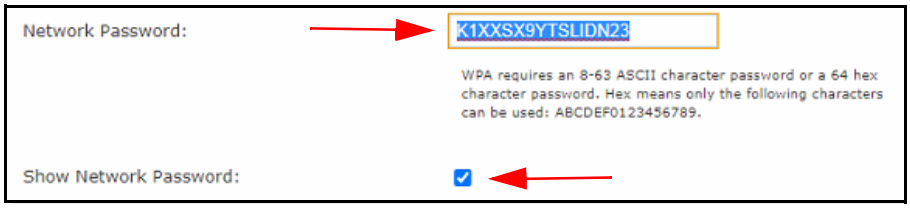

</td></tr>
<tr><td colspan="2">Private Wi-Fi Network Configuration (5GHz)</td></tr>
<tr><td>Wireless Network</td><td>Select Enable to turn on the 5GHz network, or select Disable to turn it off.</td></tr>
<tr><td>Network Name (SSID)</td><td>This field displays the wireless network name, also called the SSID (service set identifier) for the primary 5GHz radio. The wireless network name will appear in the list of available wireless networks for the client device wishing to connect. The default wireless network name for the 5GHz network is defined as follows:
“WiFi” plus the last 6 characters of the gateway’s cable modem (CM) MAC address (all in upper case), and “-5G” added to the end.
Changing the Wireless Network Name:
You can change the primary network name to a personalized one. Highlight the old SSID and delete.
 

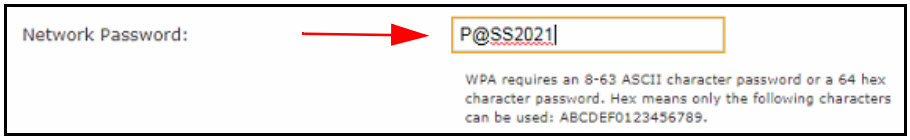
Enter your personalized network name and then click Save Settings at the bottom of the page.
 

NOTE: If you change the SSID, the device does not revert to the default value when the device is power cycled, but does revert to this default value if the device is reset to factory defaults.</td></tr>
</table>

Label	Description
Mode	Select the wireless networking standard (802.11 mode) to use. Only wireless clients that support the networking protocol(s) you select are able to connect to the wireless network. Available choices for the 5GHz radio are: 802.11n, 802.11ac, 802.11n/ac, 802.11a/n/ac, 802.11a/n/ac/ax (ax is Wi-Fi 6). 
Security Mode	Select the desired wireless security mode from the drop down menu.  When you select **'Show More Security Mode Options'** the following screen appears with important security information. 
Channel Selection	Select **Automatic** if you want the UBC1329AA00 to automatically choose the best channel to use based on the environment where it is installed. Automatic is generally reccommended because it allows the gateway to continually scan the environment and select the best channel. Select **Manual** if you want to be able to select the channel yourself. When Manual is selected, the **Channel** drop down menu becomes editable. 

<table>
<tr><th>Label</th><th>Description</th></tr>
<tr><td>Channel</td><td>When Manual channel selection is chosen, you are able to select your preferred channel from the drop down menu. Options for the 5GHz network are: 36, 40, 44, 48, 149, 153, 157, 161 and 165.
 
</td></tr>
<tr><td>Channel Bandwidth</td><td>The 802.11n and 802.11ac specifications provide a 40MHz-wide channel in addition to the legacy 20MHz-wide channel available with older wireless specifications. 802.11ac and 802.11ax specifications allow an 80MHz-wide channel.
Options for the 5GHz network are:
• 20: Set to 20 to restrict use to a 20MHz channel only.
• 20/40: Set to 20/40 to enable use of the 40MHz channel. Note that this enables higher data rates, but only clients supporting 802.11n/ac may connect.
• 20/40/80: Set to 20/40/80 to use an 80MHz-wide band. Only clients supporting 802.11ac/ax may connect.
• Auto: Selecting Auto will let the UBC1329AA00 select the proper channel width based on local usage, interference and traffic. It selects the channel on boot-up, and does not change until a reboot/power cycle of the device.
 
</td></tr>
<tr><td>Network Password

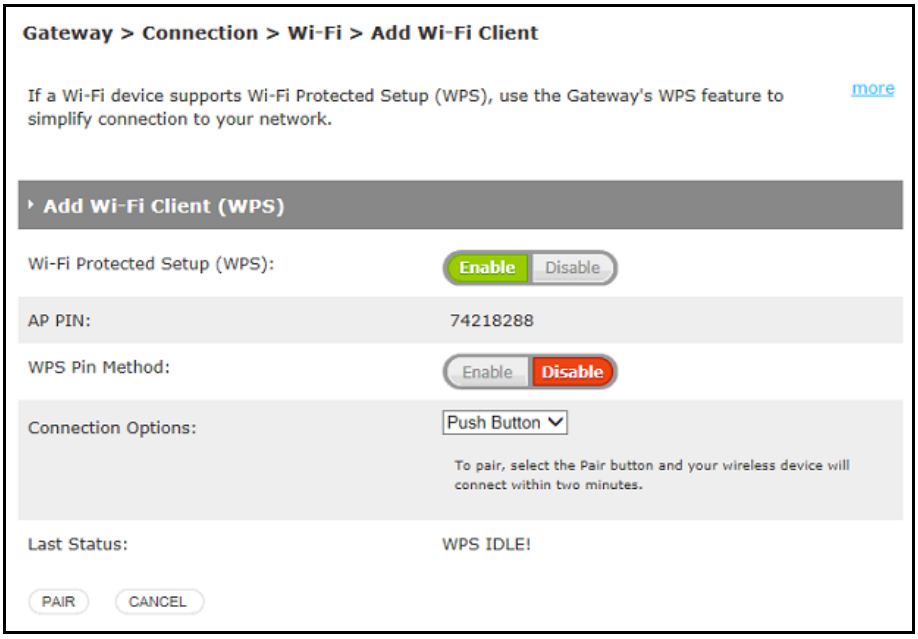
Show Network Password</td><td>The current wireless network password is displayed here. Click the Show Network Password box to be able to read the password, otherwise it is displayed in dots.
Changing the Wireless Password:
You can change the wireless password to a personalized one.
1. Highlight the old password and delete it.
 

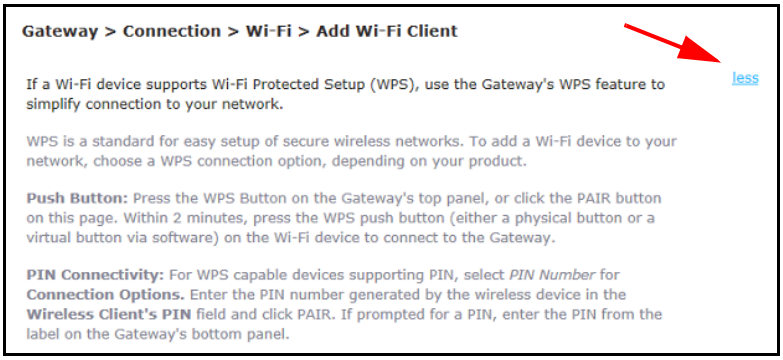
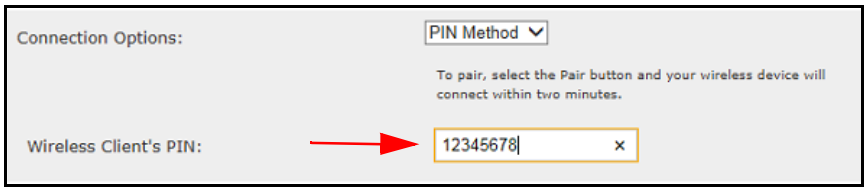
2. Check the Show Network Password box to be able to read the password.
3. Enter your personalized network password and then click Save Settings at the bottom of the page.
 
</td></tr>
</table>

Label	Description
Broadcast Network Name	When enabled, the SSID, or network name, is visible to wireless clients wishing to connect to the UBC1329AA00. When not enabled, the SSID will not be visible for connection.
Enable WMM	Check the box to enable WMM (Wi-Fi Multimedia). WMM controls WLAN transmission priority on packets transmitted over the wireless network to ensure quality of serive in your wireless network. **NOTE:** Disabling WMM will break the 802.11n specification and result in speeds that tend toward a maximum speed of 54Mbps (802.11g max speeds).
Save Settings	Select to save the 5GHz wireless configuration.
Cancel	Select to cancel the 5GHz wireless configuration.

4.2.6 Wi-Fi Add Wi-Fi Client

The **Wi-Fi > Add Wi-Fi Client** page allows devices to connect to the wireless network using WPS (Wi-Fi Protected Setup). WPS eliminates the need to know the encryption type, network name (SSID), or the wireless password.



Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.  
Add Wi-Fi Client (WPS	
Wi-Fi Protected Setup (WPS)	Select **Enable** to turn on the WPS feature, or select **Disable** to turn it off.
AP PIN	Displays the WPS PIN number for the UBC1329AA00.
WPS PIN Method	Select **Enable** to turn on the WPS PIN Method, or select **Disable** to turn it off.
Connection Options	Allows you to choose between the 2 WPS modes: 1. **PIN:** When selected, the user must enter the client device's WPS PIN in the WPS Client PIN field. You must enable the PIN method in the field above. When PIN is selected, the WPS Client Pin field will appear as shown here:  2. **Push Button:** A software or hardware button is pushed on both the UBC1329AA00 and the wireless client that wishes to connect. Both devices are then in registration mode. Then click the **PAIR** button at the bottom of the page. 
Last Status	Displays the most recent WPS status for the UBC1329AA00.
Pair	Click the **PAIR** button after entering the WPS Client Pin.
Cancel	Select to cancel the WPS configuration.

4.2.7 MTA

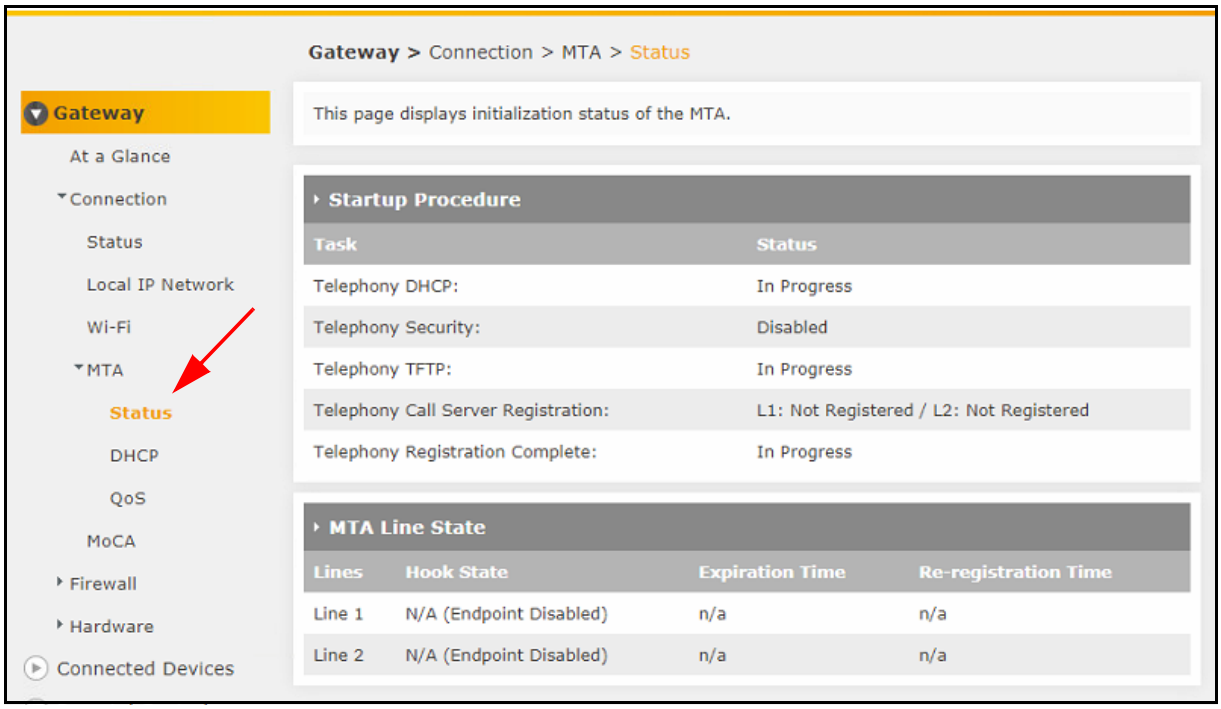
The **Connection > MTA** menu allows you to view the status and settings of the voice (telephony) function of the UBC1329AA00.

See the following topics:

- Status on page 51
- DHCP on page 52
- QoS on page 54

4.2.7.1 Status

The **MTA > Status** screen displays voice startup procedure and line state information.

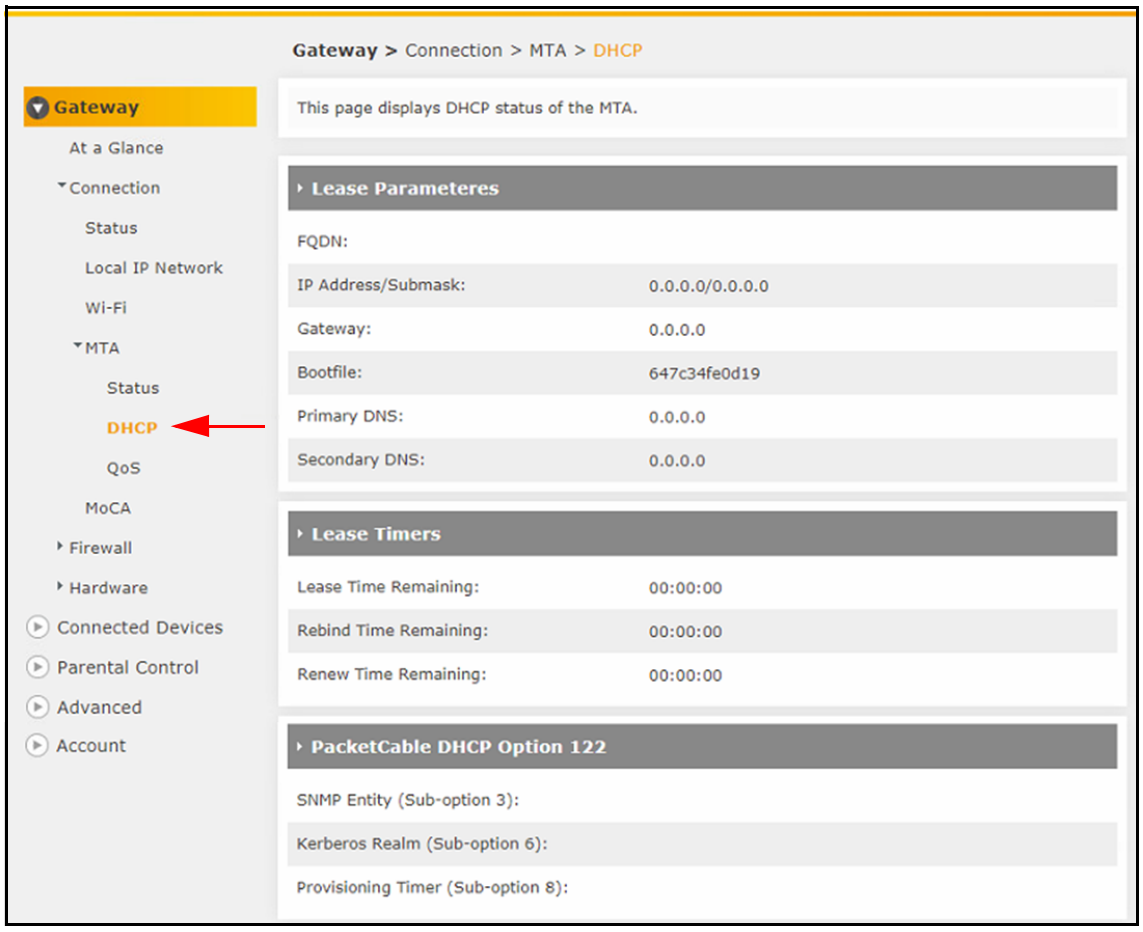


Label	Description
Startup Procedure	
Telephony DHCP	Displays the DHCP IP address of the MTA portion of the device.
Telephony Security	Shows the security mode of the MTA (Basic, Hybrid, or Security).

Label	Description
Telephony TFTP	Displays if the MTA's TFTP server is available.
Telephony Call Server Registration	Shows the status of the MTA's registration to the service provider's call server per line (Disconnected, Operational).
Telephony Registration Complete	Displays the completion status of the MTA registration (N/A, Operational).
MTA Line State	
Lines	Displays the telephone line connections: Line 1, Line 2.
Hook State	Displays if telephone is on-hook or off-hook.
Expiration Time	Displays the time the current connection registration expires.
Re-registration Time	Displays the time the current connection will re-register.

4.2.7.2 DHCP

The **MTA > DHCP** (Dynamic Host Control Protocol) page displays the UBC1329AA00 DHCP lease parameters, timers, and PacketCable Option 122 information.

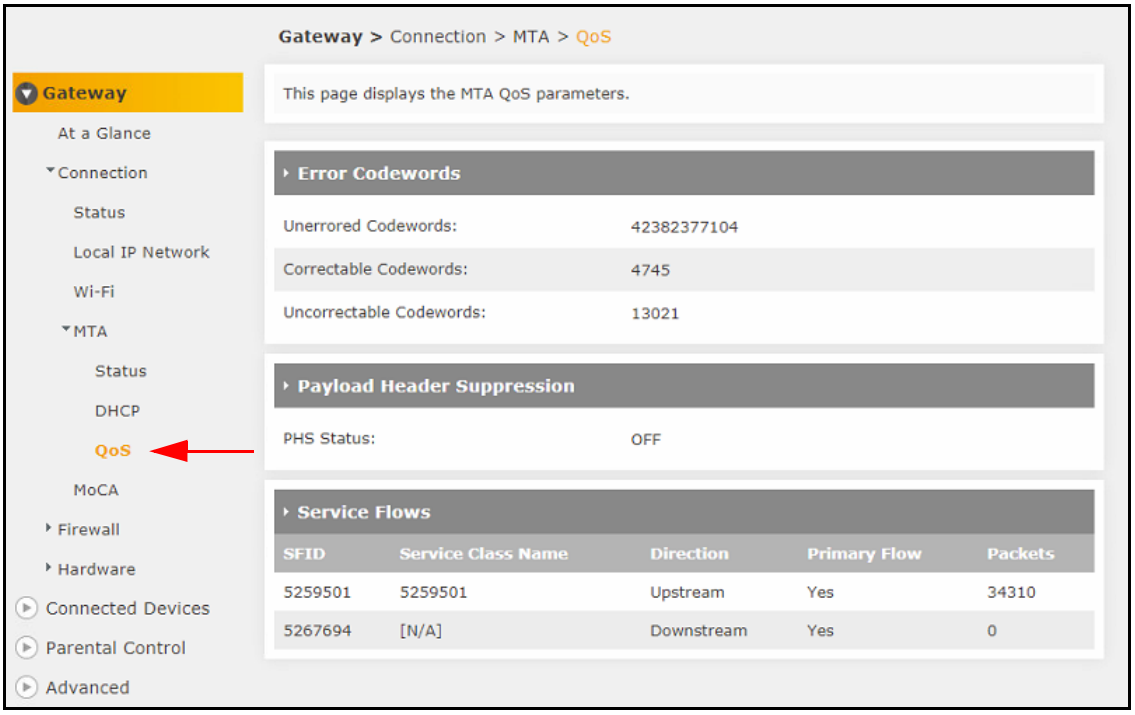


Label	Description
Lease Parameters	
FQDN	Displays the fully qualified domain name (FQDN), which specifies all the domain levels of the domain name system.
IP Address/ Submask	Displays the IP address and submask of the telephone connection.
Gateway	Displays the gateway address.
Bootfile	Displays the location and file name of the file used to configure the telephony system.
Primary DNS	Displays the main domain name server.
Secondary DNS	Displays the secondary domain name server.
Lease Timers	
Lease Time Remaining	Displays the time left on the DHCP lease.
Rebind Time Remaining	Displays the time left on the rebinding lease. Rebinding is when the client tries to renew the DHCP lease on the same server before trying to connect to a new DHCP server.

Label	Description
Renew Time Remaining	Displays the time left before the DHCP lease renews.
PacketCable DHCP Option 122	
SNMP Entity (Sub-option 3)	Displays the SNMP entity
Kerberos Realm (Sub-option 6)	Displays the Kerberos domain name.
Provisioning Timer (Sub-option 8)	Displays the time interval for the provisioning flow to complete, if set.

4.2.7.3 QoS

The **MTA > Quality of Service** (QoS) page allows you to monitor the UBC1329AA00 error codewords, payload header suppression, and service flows.



Label	Description
Error Codewords	

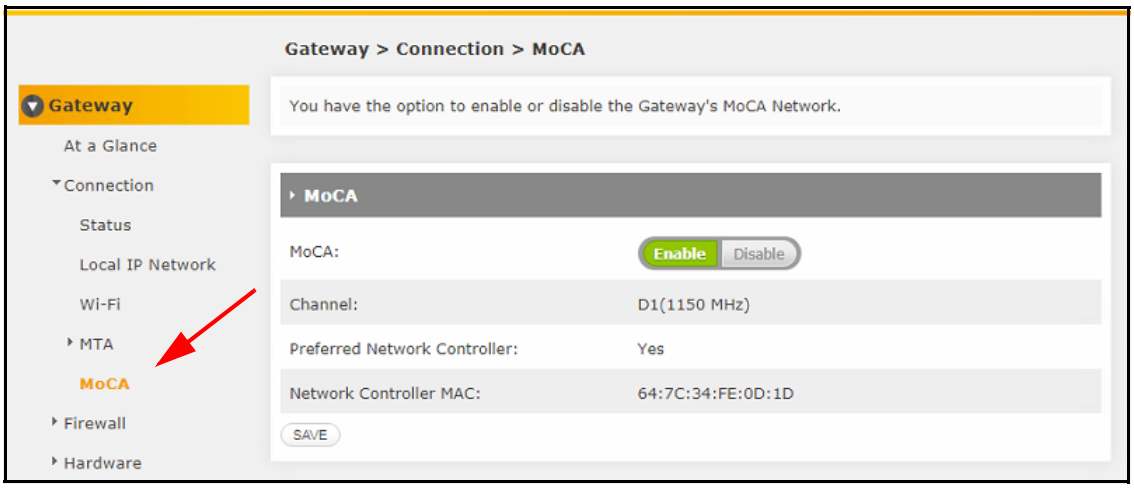
Label	Description
Unerrored Codewords	Displays the number of codewords passed without error.
Correctable Codewords	Displays the number of codewords corrected.
Uncorrectable Codewords	Display the number of codewords that could not be corrected.
Payload Header Suppression	
PHS Status	Displays whether the payload header is suppressed (on) or not (off). When on, redundant information is not transmitted.
Service Flows	
SFID	Displays the service flow ID number.
Service Class Name	Displays the service class name string that the CMTS associates with a QoS parameter set.
Direction	Displays the direction of the data flow.
Primary Flow	Indicates if the SFID is a primary flow or not.
Packets	Displays the quantity of packets transported on a single SFID.

4.2.8 MoCA

The **Connection > MoCA** screen of the UBC1329AA00 allows you to configure MoCA settings. MoCA (Multimedia over Coax Alliance) technology is a standard that enables the distribution of high quality digital multimedia content throughout the home over existing coaxial cabling.

MoCA is a terrific technology that offers extended LAN support over a different set of frequencies on your home cable network. MoCA connected devices will be on the same LAN subnet as the Ethernet ports and Wireless Primary Networks.

IMPORTANT NOTE: Always consult your Cable Service Provider before enabling MoCA to be sure that the Point Of Entry Filter is properly installed and there is no conflict with another MoCA service.



Label	Description
MoCA	Select the appropriate option to either Enable or Disable the MoCA feature.
Channel	Shows the MoCA channel and frequency the gateway is operating in.
Preferred Network Controller	Displays whether the gateway is operating as the network controller for the MoCA network.
Network Controller MAC	Displays the MAC address for the MoCA interface of the UBC1329AA00.
SAVE	Select to save MoCA configuration.

4.3 Firewall

The **Gateway > Firewall** screen lets you configure firewall settings for both IPv4 and IPv6. The firewall helps keep the devices on the LAN safe, by preventing intrusion attempts and other undesirable activity coming from the WAN (wide area network).

To configure firewall settings:

1. Click **Gateway** from the left side menu.
2. Click **Firewall** under Gateway.

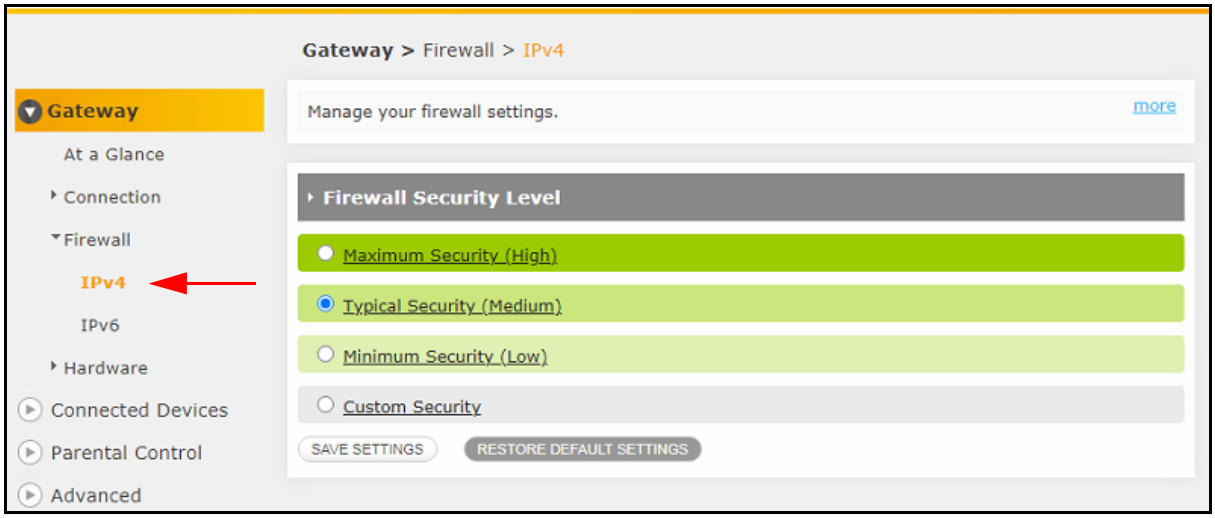
See the following topics:

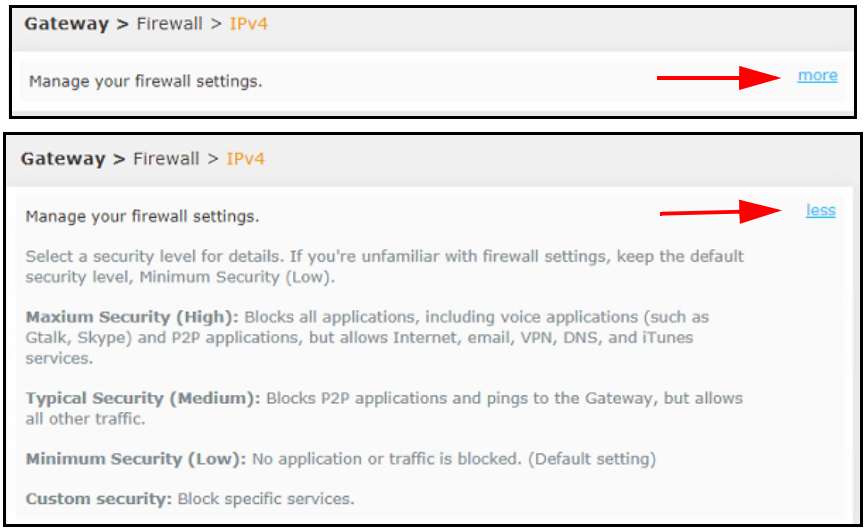
- IPv4 on page 57

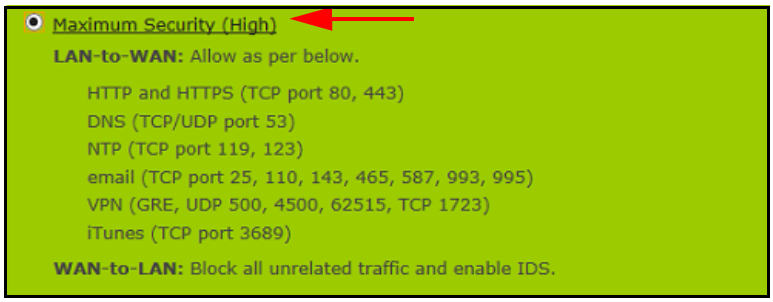
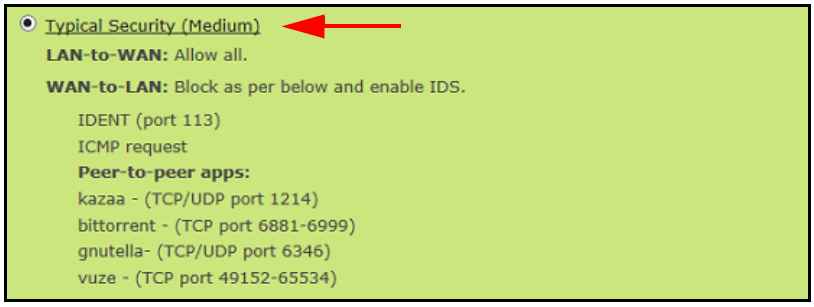
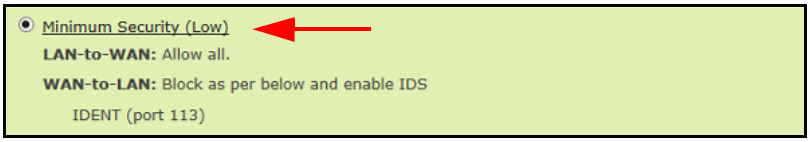
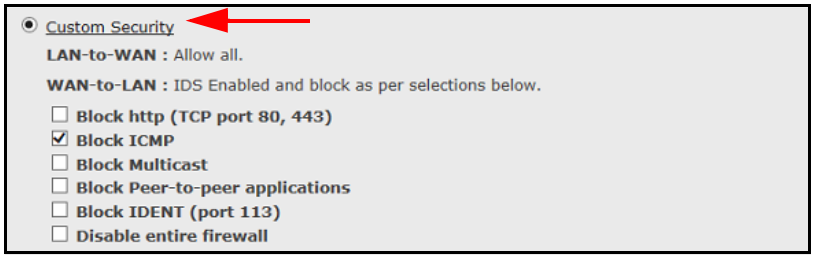
• IPv6 on page 59

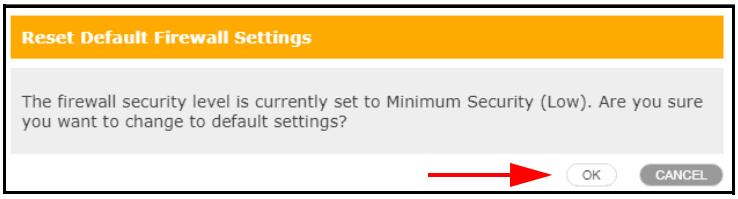
4.3.1 IPv4

The **Firewall > IPv4** page allows you to manage settings for the IPV4 firewall.



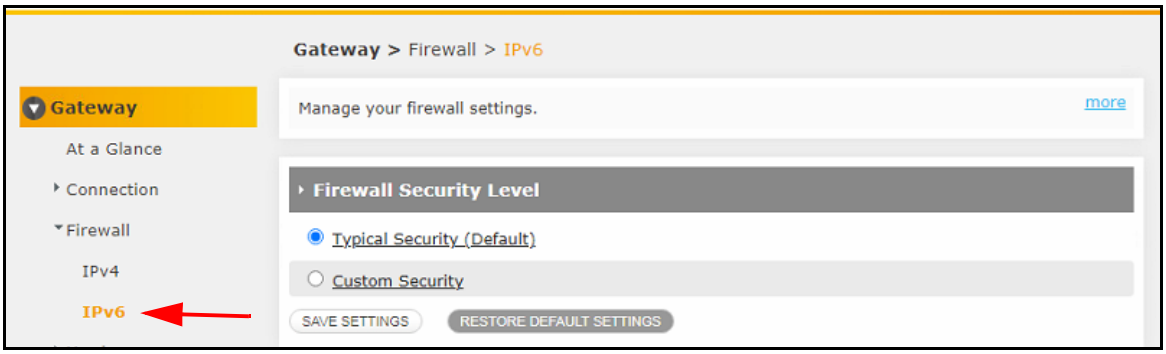
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 
Firewall Security Level: Select a security level for IPv4 firewall. If you are unfamiliar with firewall security, keep it at the default value of typical security (medium). Click on the security level name to display	

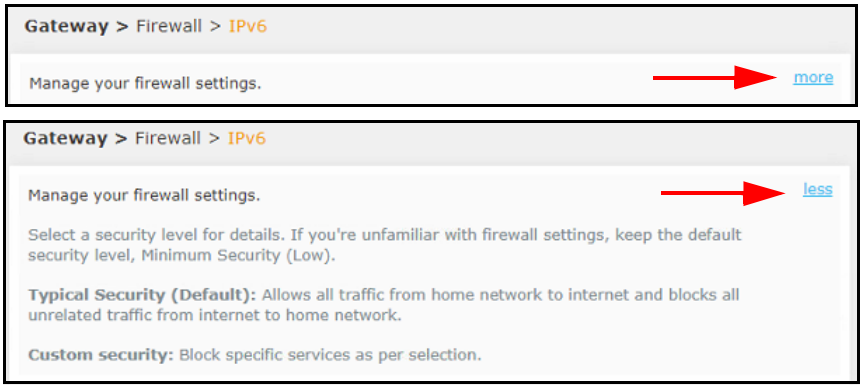
Label	Description
Maximum Security (High)	Check to select Maximum Firewall Security (High). Maximum security blocks all applications, including voice apps (like Skype or Gtalk) and P2P applications, but allows email, Internet, VPN, DNS and iTunes servicces. Details are visible when you click on the name. 
Typical Security (Medium)	Check to select Typical Firewall Security (Medium). With medium security, P2P (peer-to-peer) applications and pings to the gateway, but allows all other traffic. P2P applications allow peers, or individual computers, to connect to each other directly over the Internet and share files. These applications introduce vulnerabilities in the network. Details are visible when you click on the name. 
Minimum Security (Low)	Check to select Minimum Firewall Security (Low). With minimum security, no applications or traffic is blocked. Details are visible when you click on the name. 
Custom Security	When Custom Security is selected, additional fields are displayed that allow you to enable or disable specific firewall features. Details are visible when you click on the name. 

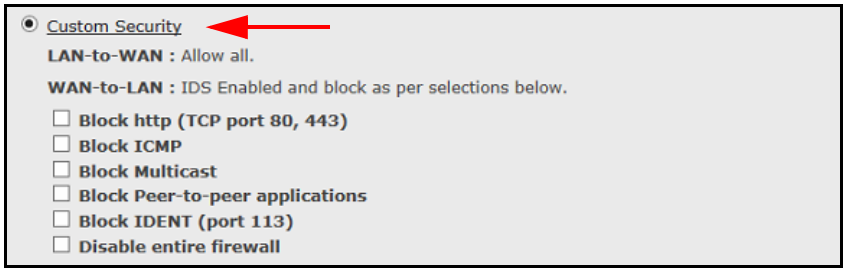
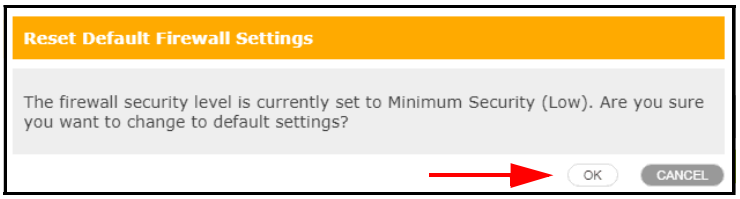
Label	Description
Save Settings	Select to save IPv4 firewall configuration.
Restore Default Settings	Select to restore default firewall settings for IPv4. You will then be prompted to confirm your decision. Select OK to confirm. 

4.3.2 IPv6

The **Firewall > IPv6** page allows you to manage settings for the IPV6 firewall.



Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 

Label	Description
Firewall Security Level: Select a security level for IPv6 firewall. If you are unfamiliar with firewall security, keep it at the default value of typical (medium). Click on the security level name to display	
Typical Security (Medium)	Check to select Typical Firewall Security (Medium). Medium security allows all traffic from the home network to the Internet and blocks all unrelated traffic from the Internet to the home network. Details are visible when you click on the name. 
Custom Security	When Custom Security is selected, additional fields are displayed that allow you to enable or disable specific firewall features. Details are visible when you click on the name. 
Save Settings	Select to save IPv6 firewall configuration.
Restore Default Settings	Select to restore default firewall settings for IPv6. You will then be prompted to confirm your decision. Select OK to confirm. 

4.4 Hardware

The **Gateway > Hardware** menu displays information about the UBC1329AA00 hardware, Ethernet ports and wireless connections.

To view gateway hardware information:

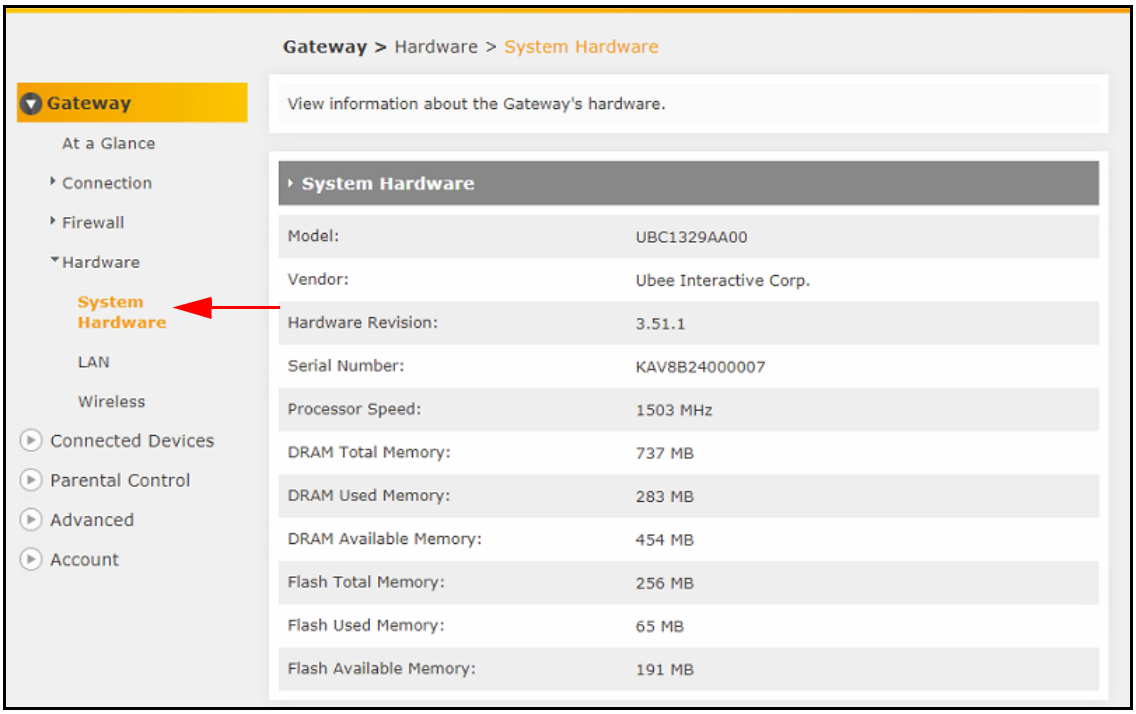
1. Click **Gateway** from the left side menu.
2. Click **Hardware** under Gateway.

See the following topics:

- System Hardware on page 61
- LAN on page 62
- Wireless on page 63

4.4.1 System Hardware

The **Hardware > System Hardware** page displays hardware component information for the UBC1329AA00.

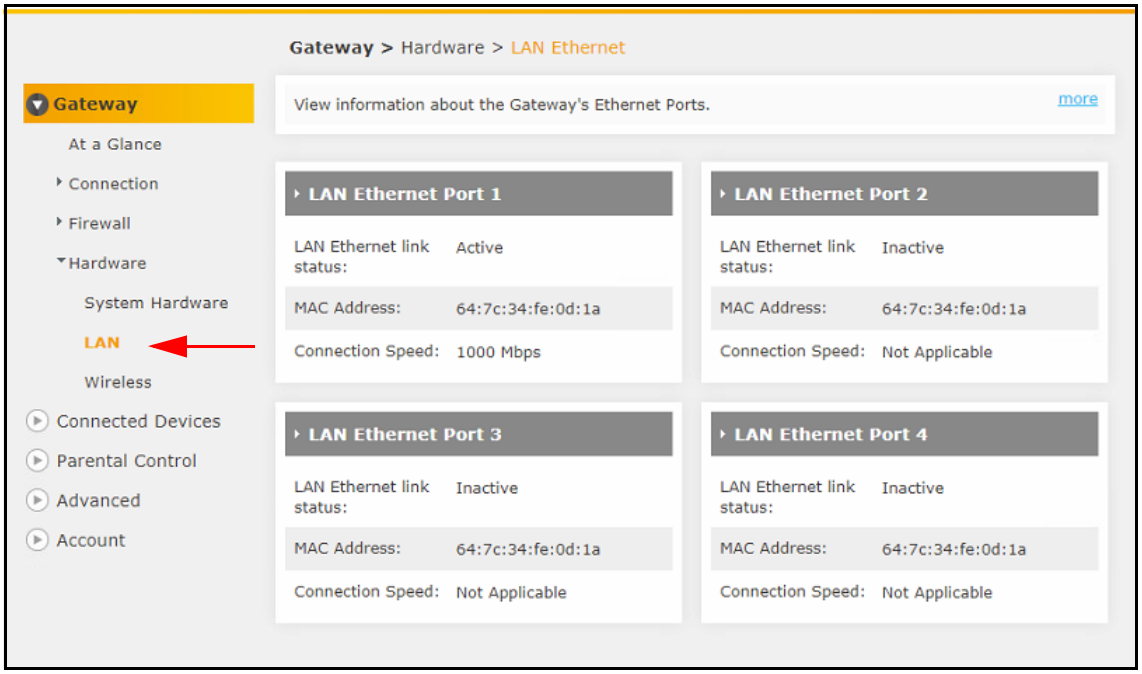


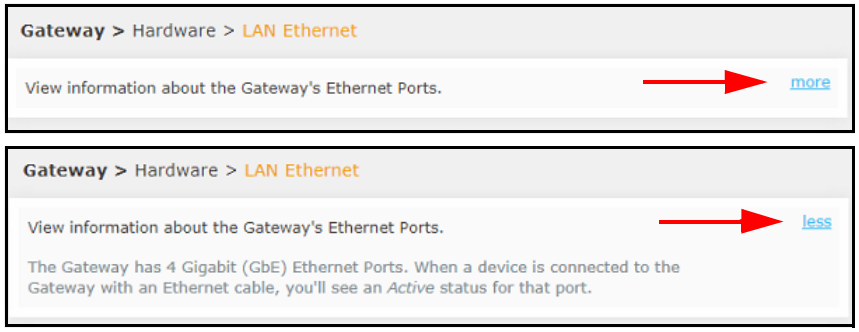
Label	Description
System Hardware	
Model	Displays the model number of the gateway.
Vendor	Shows the manufacturer of the gateway.

Label	Description
Hardware Revision	Displays the hardware design version.
Serial Number	Shows the unique manufacterer's serial number for the device.
Processor Speed	Displays the processor speed.
DRAM Total Memory	Displays the total DRAM (dynamic random-access memory). DRAM constantly needs power to keep data stored
DRAM Used Memory	Displays the amount of DRAM (dynamic random-access memory) that has been used.
DRAM Available Memory	Displays the amount of DRAM (dynamic random-access memory) that is available.
Flash Total Memory	Displays the total flash memory.
Flash Used Memory	Displays the amount of flash memory that has been used.
Flash Available Memory	Displays the amount of flash memory that is available.

4.4.2 LAN

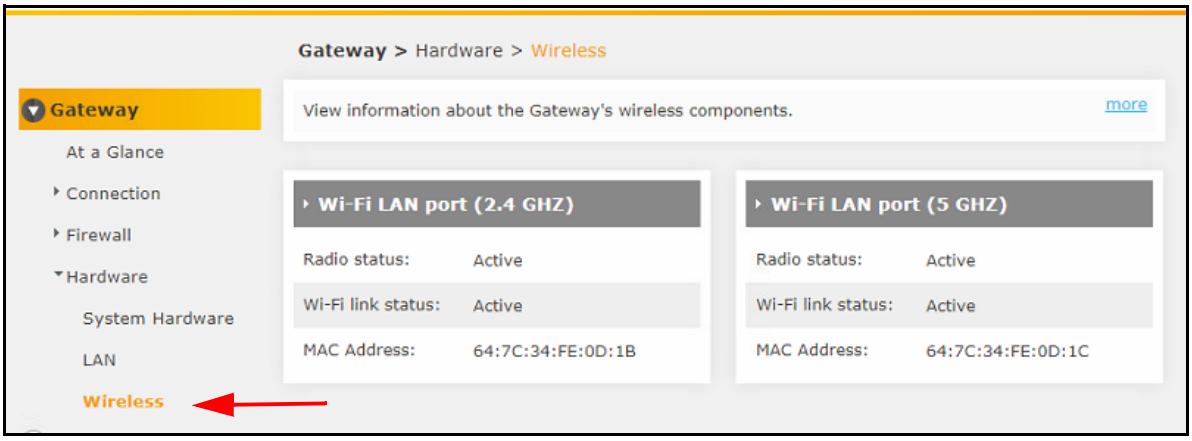
The **Hardware > LAN** page displays information about the UBC1329AA00 LAN, or Ethernet ports.

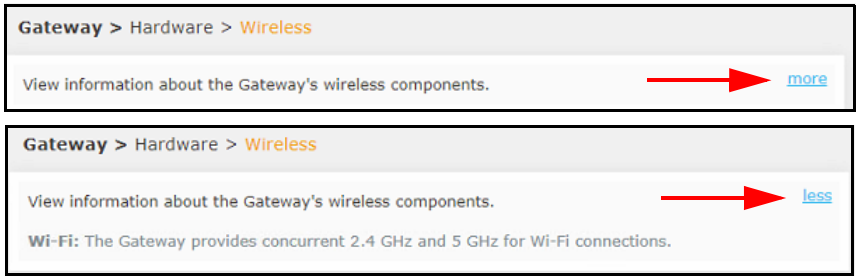


Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 
LAN Ethernet Ports 1-4	For each Ethernet port, the following is displayed: • **LAN Ethernet Link Status:** Shows whether a device is currently connected to the port via an Ethernet cable (active or inactive). • **MAC Address:** Displays the MAC address of the Ethernet port. • **Connection Speed:** Displays the connection speed of the port if applicable.

4.4.3 Wireless

The **Hardware > Wireless** page displays information about the UBC1329AA00 wireless networks.



Label	Description
More	When you click on **more**, a description of the screen information is shown. Click **less** to shrink the description box again. 
LAN Ethernet Ports 1-4	For each Wi-Fi 'port', the 2.4GHz and 5GHz radio bands, the following is displayed: • **Radio Status:** Shows whether the wireless radio is turned on or not (active or inactive). • **Wi-Fi Link Status:** Shows whether data traffic is currently being passed (active or inactive). • **MAC Address:** Displays the MAC address of the Wi-Fi 'port'.

5 Connected Devices

The Connected Devices page shows information about devices currently connected and recently connected to the UBC1329AA00 Advanced Wi-Fi 6 Voice Gateway.

To access the connected devices screen:

1. Access the Web user interface. Refer to Accessing the Web User Interface Locally on page 21.
2. Click **Connected Devices** from the left side main menu.

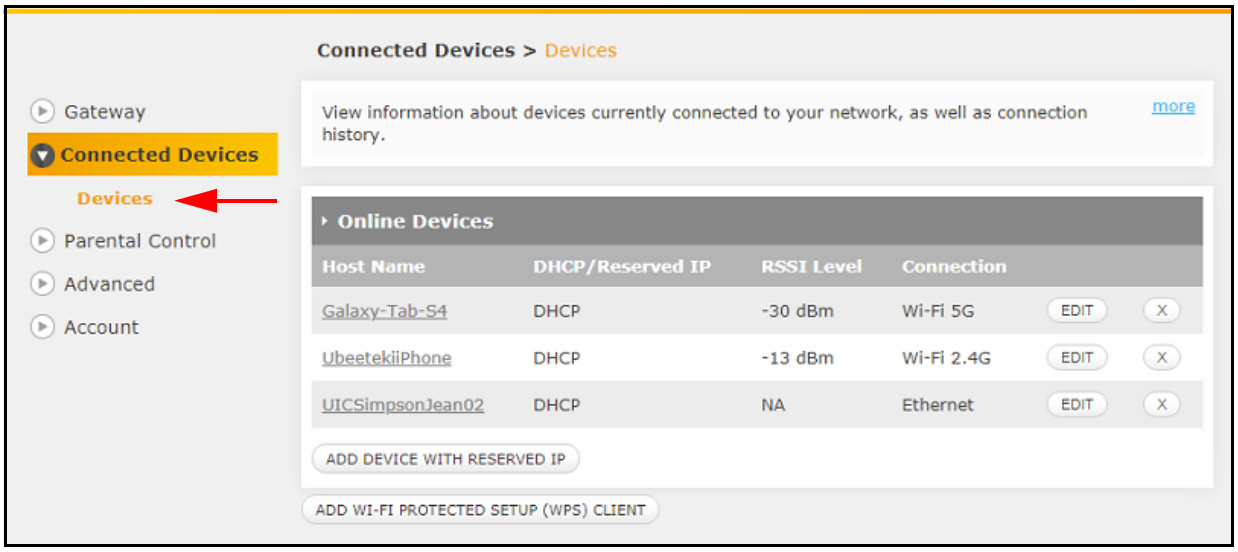
3. The **Connected Devices > Devices** screen is displayed.

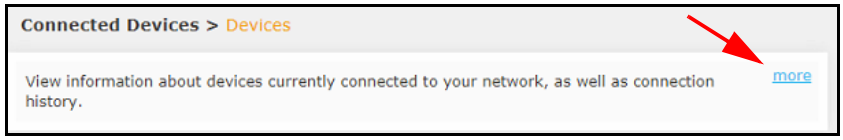
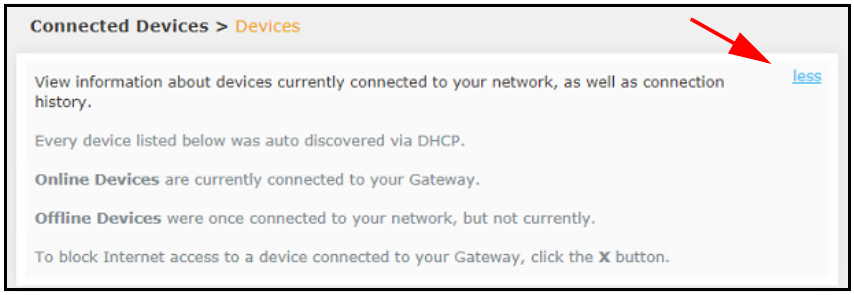
See the following topics:

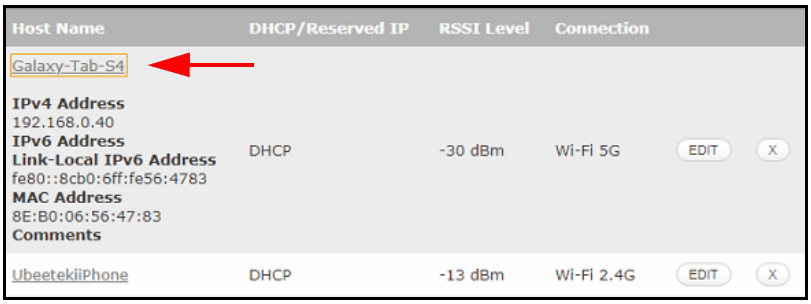
- Devices on page 66
- Edit Device on page 67
- Add Device with Reserved IP Address on page 69

5.1 Devices

The **Connected Devices > Devices** page shows the devices that are currently connected or recently connected to the UBC1329AA00.

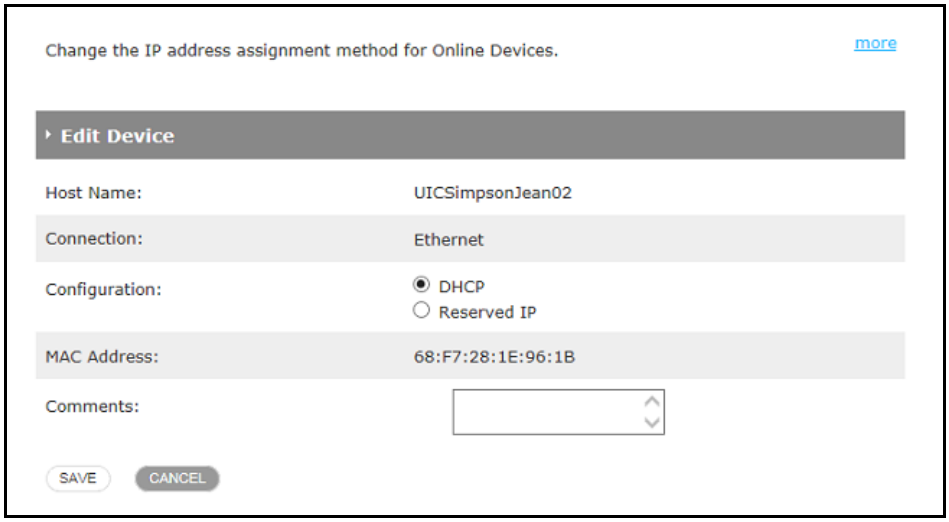


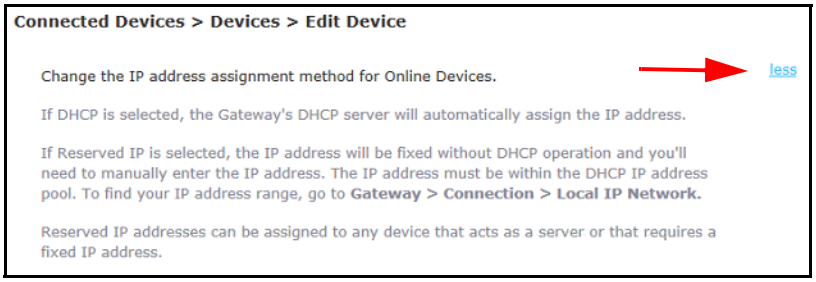
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.  
Online Devices	

Label	Description
Host Name	Displays the name of the device connected to the primary network. When you click on the host name, the window will expand with information about the connected client. Click on the name again to shrink the window. 
DHCP/ Reserved IP	Shows whether DHCP (Dynamic Host Configuration Protocol) is being used or if the device has a reserved IP address. The DHCP server dynamically assigns an IP address to each device on the network.
RSSI Level	Shows the RSSI (Received Signal Strength Indicator) of connected wireless clients. For more information, refer to Understanding Received Signal Strength on page 93.
Connection	Displays how the device is connected to the gateway, such as Ethernet, MoCA, or Wi-Fi.
EDIT	Select **EDIT** to configure settings for the connected device. You are taken to the Edit Device page. See Edit Device on page 67.
X	If you want to block Internet access for a device, click on the **X** next to the device info.
Add Device with Reserved IP	Select this button to add a device with a reserved IP address. This means the device IP address will NOT change.  Refer to Edit Device on page 67 for a screen example and explanation.
Add Wi-Fi Protected Setup (WPS) Client	Click here to be taken to the Wireless Protected Setup (WPS) page, where you can enable WPS, select the connection method and simplify connection to your wireless network. See Wi-Fi Add Wi-Fi Client on page 49. 

5.1.1 Edit Device

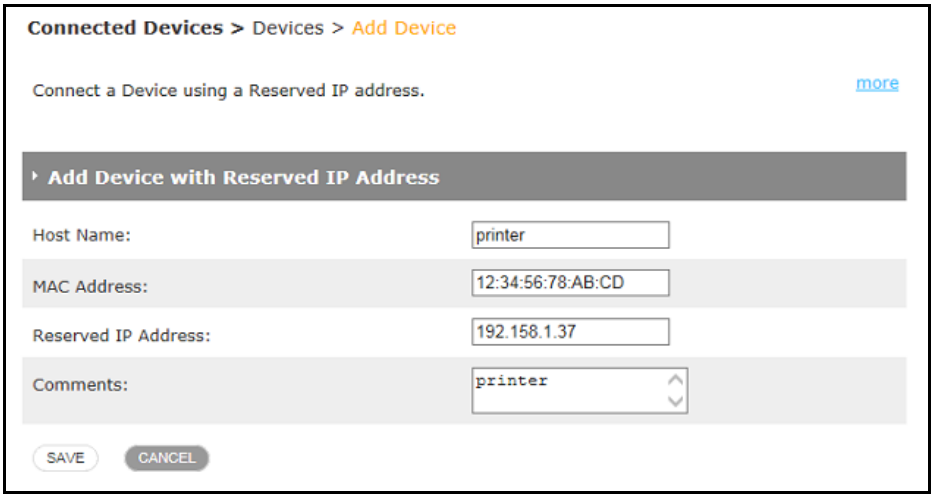
The **Connected Devices > Devices > Edit Device** page let's you edit the IP address assignment method of a connected device (DHCP vs. reserved IP address).

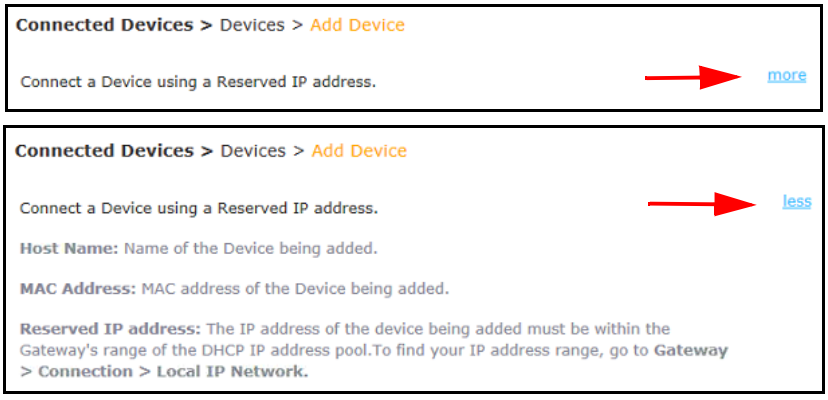


Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.  
Edit Device	
Host Name	The name of the device you wish to configure IP addressing mode appears here.
Connection	Shows the connection type for the device (Ethernet, MoCA, Wi-Fi).
Configuration	Select the preferred address assignment method: • **DHCP:** When selected, the UBC1329AA00's DHCP server will automatically assign an IP address. • **Reserved IP:** When selected, you can manually enter an IP address and it will not change.
MAC Address	Displays the device's MAC address.
Comments	If desired, enter comments in this field.
Save	Select to save the device configuration.
Cancel	Select to cancel the device configuration.

5.1.2 Add Device with Reserved IP Address

Go to the **Connected Devices > Devices > Add Device** page to add a device with a reserved (static) IP address. As an example, you might want a wireless printer to have a reserved IP address so connected devices are able to find it.



Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 
Add Device with Reserved IP Address	
Host Name	Enter the name of the device for which you want to set a reserved IP address.
MAC Address	Enter the device's MAC Address.
Reserved IP Address	Enter the IP address you want to assign to the device.
Comments	If desired, enter comments in this field.
Save	Select to save the added device.
Cancel	Select to cancel adding a device.

6 Parental Control

The **Parental Control** screens allow configuration of access policies for the UBC1329AA00.

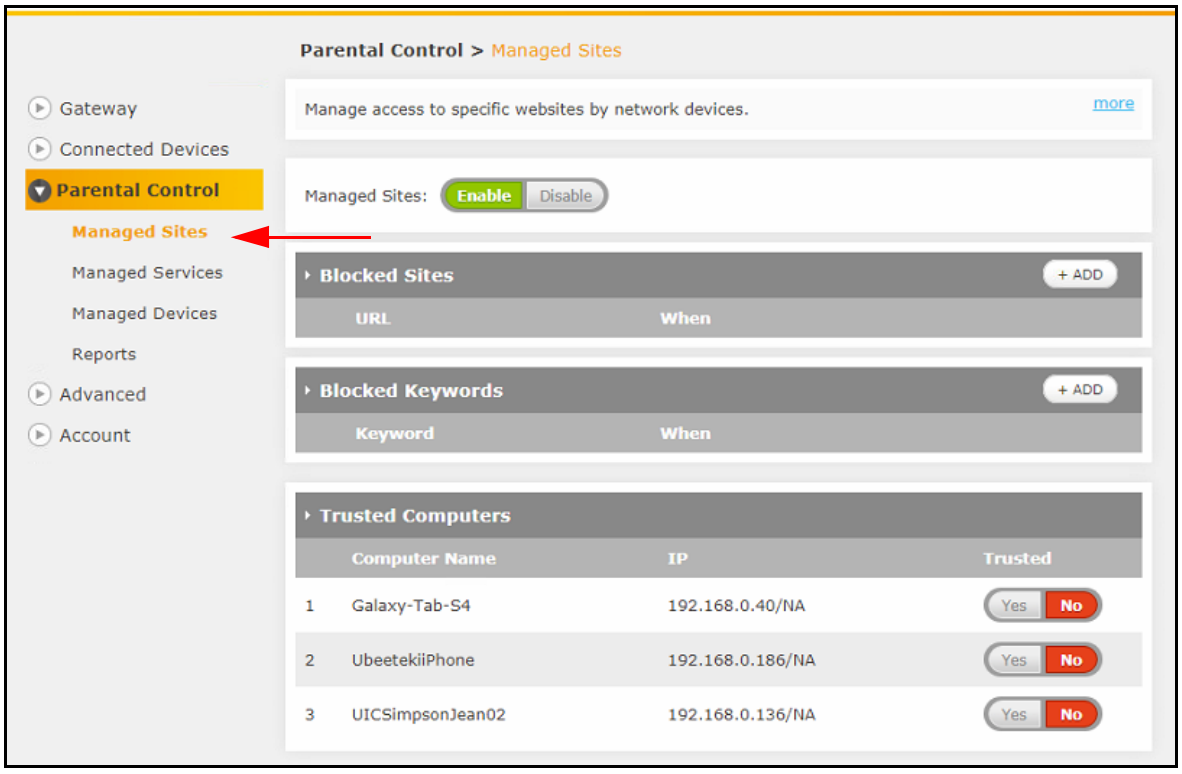
To configure Parental Control parameters:

1. Access the Web user interface. Refer to Accessing the Web User Interface Locally on page 21.
2. Click **Parental Control** from the left side main menu.

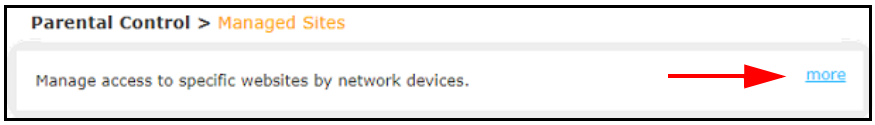
See the following topics:

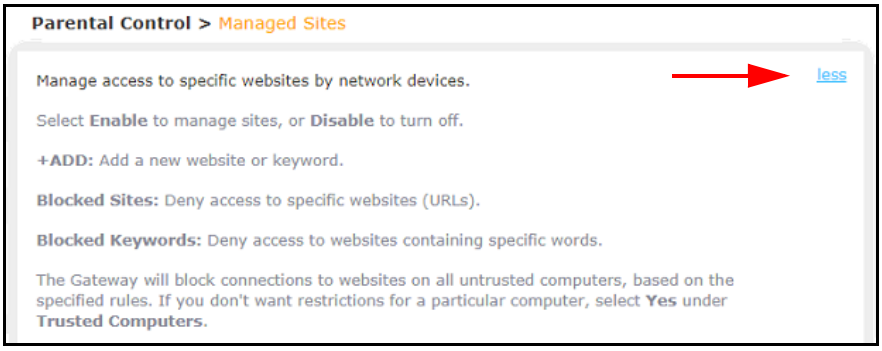
6.1 Managed Sites

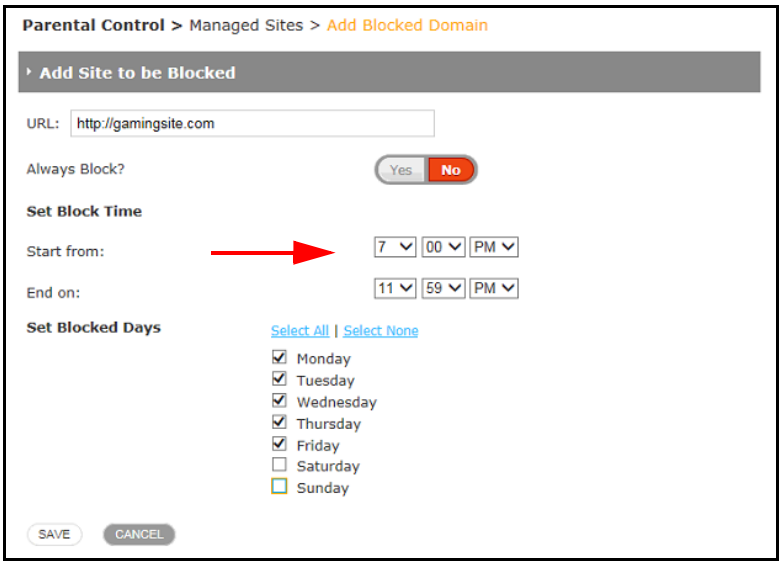
The **Parental Control > Managed Sites** page let's you manage access to specific web sites and keywords and allows you to designate trusted computers.

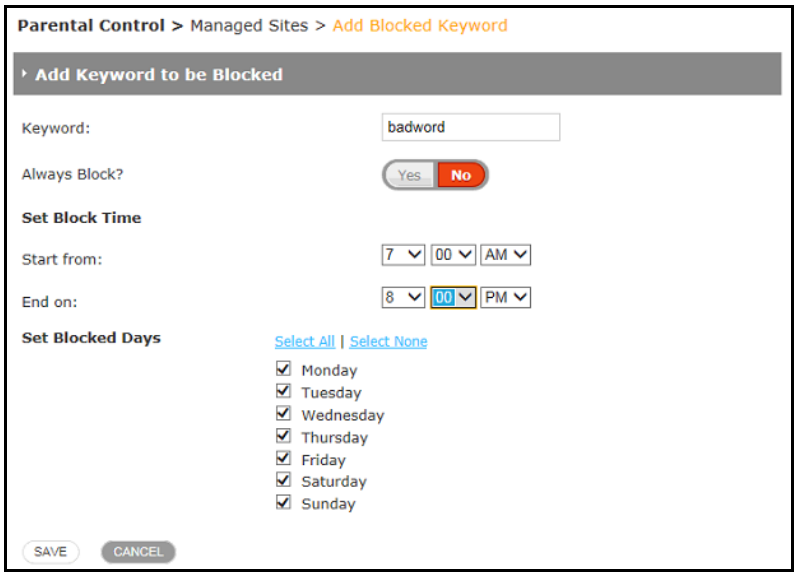


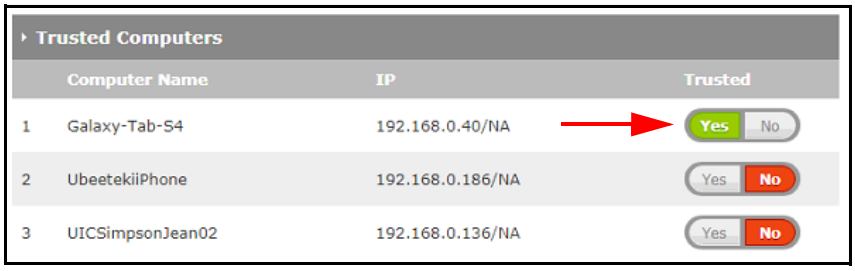
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.





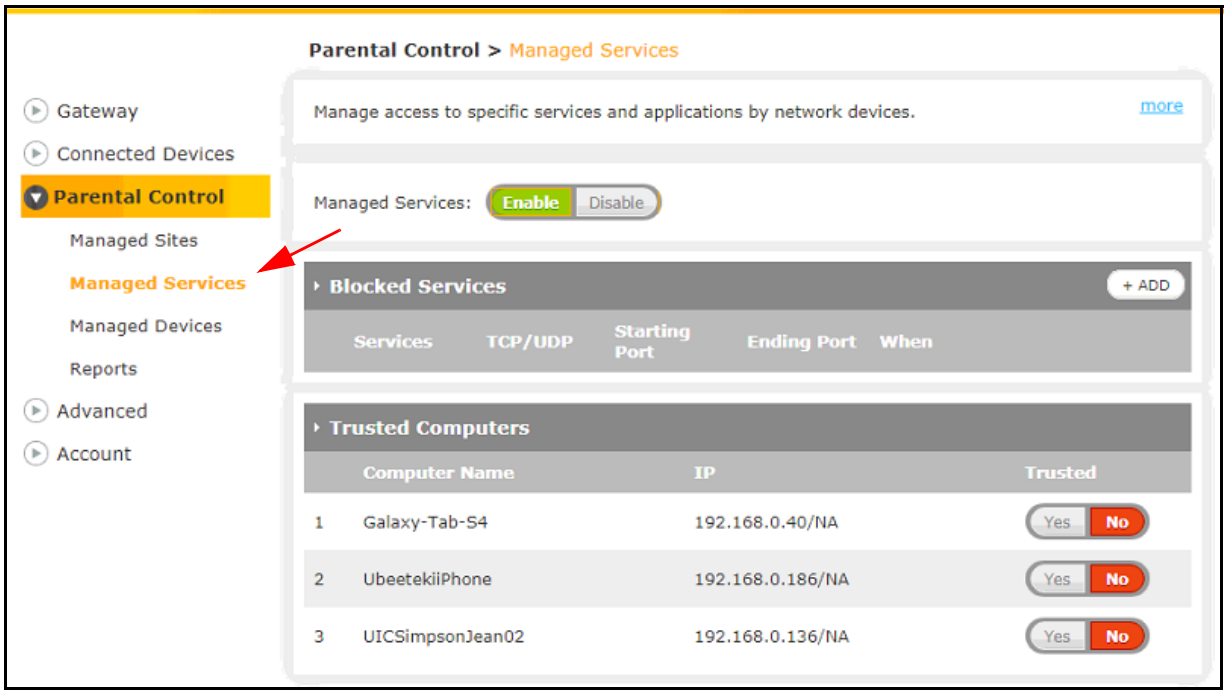
Label	Description
Managed Sites	Select **Enable** to manage access to specific web sites or **Disable** to turn it off.
Blocked Sites	Click **ADD** to block access to certain web sites.  Enter the required information (example below): • **URL:** Enter the web site URL to be blocked. • **Always Block?:** Select Yes to always block the URL. • **Set Block Time:** Select the start and end times for the URL to be blocked. • **Set Blocked Days:** Select the days of the week for the URL to be blocked. • **Save:** Select to save the blocked sites configuration. • **Cancel:** Select to cancel the blocked sites configuration.  Once saved, information about the blocked URL is displayed as below. Select **EDIT** to make changes to the rule, and select **X** to delete the rule. 

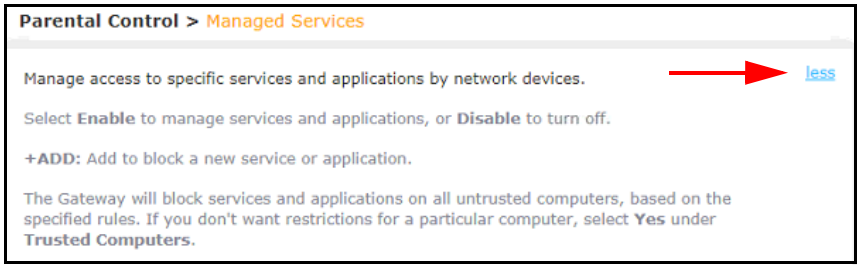
Label	Description
Blocked Keywords	Click **ADD** to block access to web sites that contain certain words.  Enter the required information (example below): • **Keyword:** Enter the keyword to be blocked. Access will be blocked for any web site that contains the keyword. • **Always Block?:** Select Yes to always block sites containing the keyword. • **Set Block Time:** Select the start and end times for the keyword to be blocked. • **Set Blocked Days:** Select the days of the week for the keyword to be blocked. • **Save:** Select to save the blocked keyword configuration. • **Cancel:** Select to cancel the blocked keyword configuration.  Once saved, information about the blocked keyword is displayed as below. Select **EDIT** to make changes to the rule and select **X** to delete the rule. 

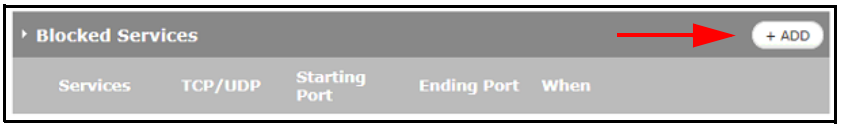
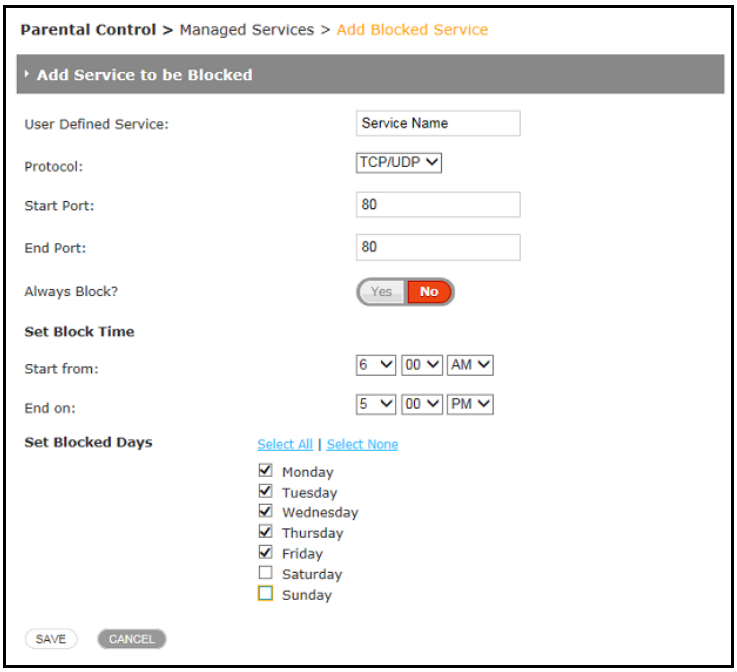
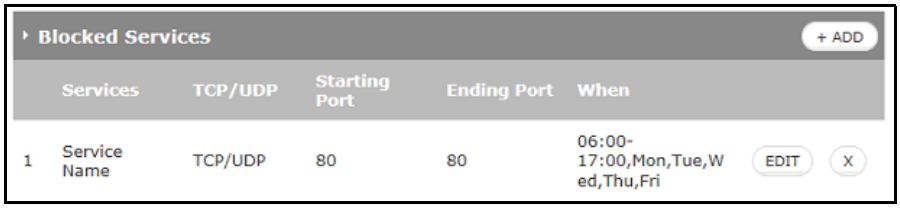
Label	Description
Trusted Computers	The UBC1329AA00 will block access to all untrusted devices based on any configures access rules. In the Trusted Computers section, currently or recently connected devices appear. If you do not want to have any restrictions on a device, select yes next to it's name. 

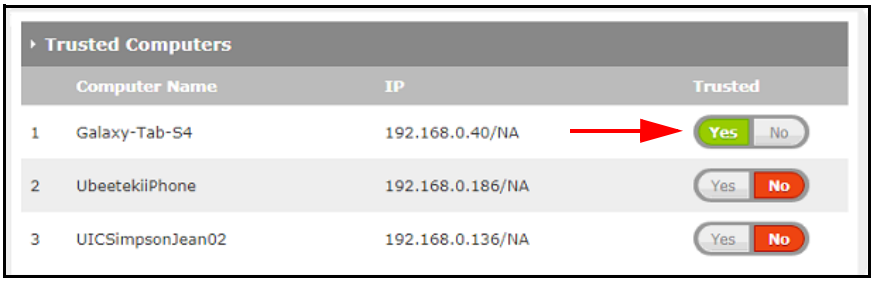
6.2 Managed Services

The **Parental Control > Managed Services** page let's you manage access to specific applications or services and allows you to designate trusted computers.



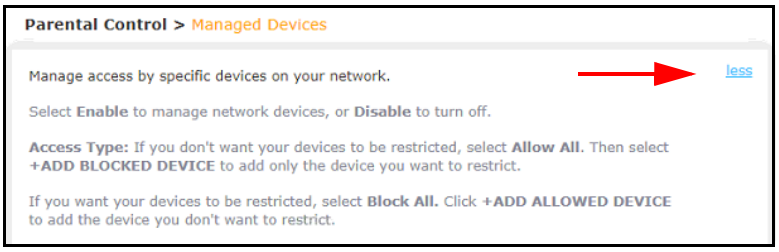
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.  
Managed Services	Select **Enable** to manage access to specific applications and services or **Disable** to turn it off.

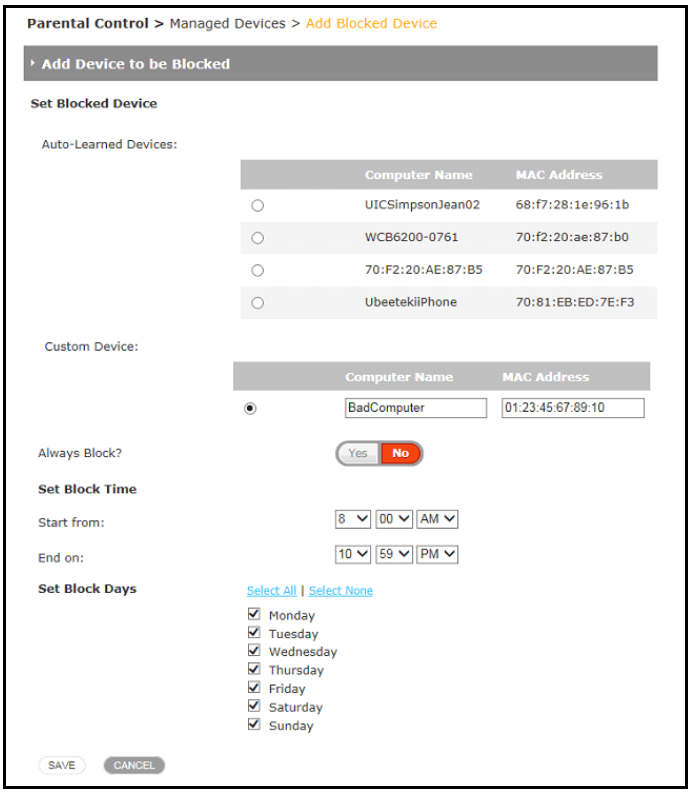
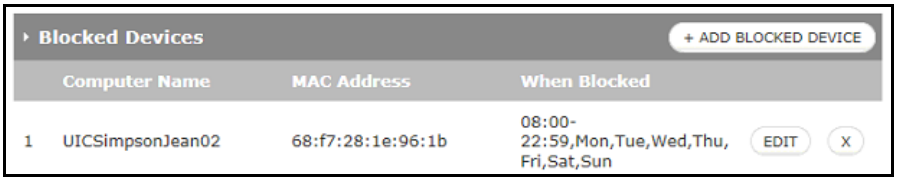
Label	Description
Blocked Services	Click **ADD** to block access to certain applications and services.  Enter the required information (example below): • **User Defined Service:** Enter the name of the application or service to be blocked. • **Protocol:** Select the desired protocol from the drop down menu. Options are TCP, UDP or TCP/UDP. • **Start Port/End Port:** Select the start and end ports. • **Always Block?:** Select Yes to always block the service. • **Set Block Time:** Select the start and end times for the service to be blocked. • **Set Blocked Days:** Select the days of the week for the service to be blocked. • **Save:** Select to save the blocked services configuration. • **Cancel:** Select to cancel the blocked services configuration.  Once saved, information about the blocked service is displayed as below. Select **EDIT** to make changes to the rule, and select **X** to delete the rule. 

Label	Description
Trusted Computers	The UBC1329AA00 will block access to all untrusted devices based on any configures access rules. In the Trusted Computers section, currently or recently connected devices appear. If you do not want to have any restrictions on a device, select yes next to it's name. 

6.3 Managed Devices

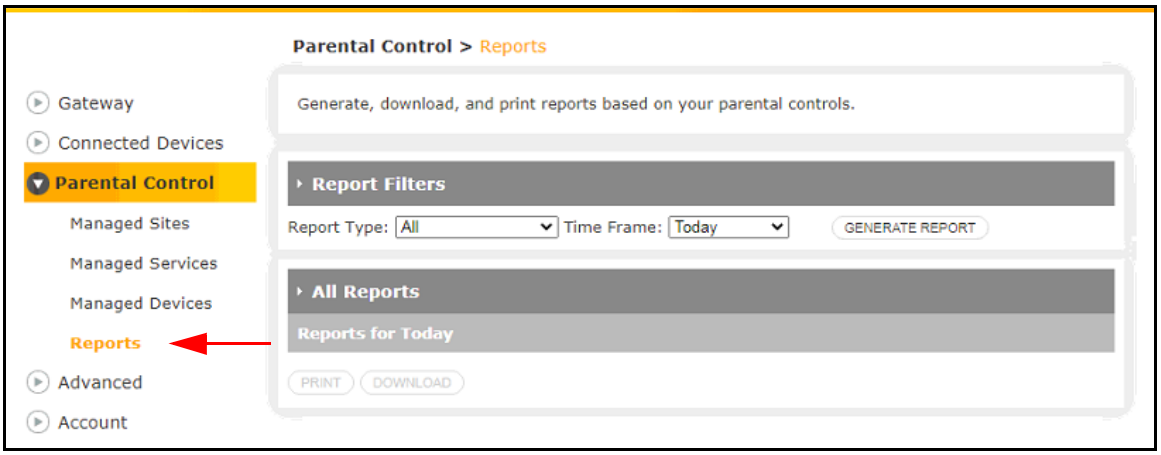
The **Parental Control > Managed Devices** page let's you manage access for specific devices to your network.

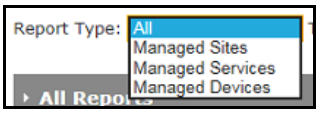
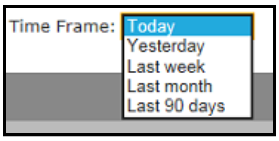
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.  
Managed Devices	
Managed Devices	Select **Enable** to manage access for specific devices or **Disable** to turn it off.
Access Type	If you don't want any devices to be restricted from accessing the network, select **Allow All**. If you want to block all devices from accessing the network, select **Block All**.

Label	Description
Blocked Devices	Click **ADD BLOCKED DEVICE** to block access to certain devices.  Enter the required information (example below): • **Auto-Learned Devices:** Currently or recently connected devices appear here. Check the circle beside any devices for which you wish to block access. • **Custom Device:** Enter the name and MAC address for the custom device who's access you want to block. • **Always Block?:** Select Yes to always block the selected devices. • **Set Block Time:** Select the start and end times for the devices to be blocked. • **Set Blocked Days:** Select the days of the week for the devices to be blocked. • **Save:** Select to save the blocked devices configuration. • **Cancel:** Select to cancel the blocked devices configuration.  Once saved, information about the blocked devices is displayed as below. Select **EDIT** to make changes to the rule, and select **X** to delete the rule. 

6.4 Reports

The **Parental Control > Reports** page allows you to generate, download and print reports based upon your parental controls.



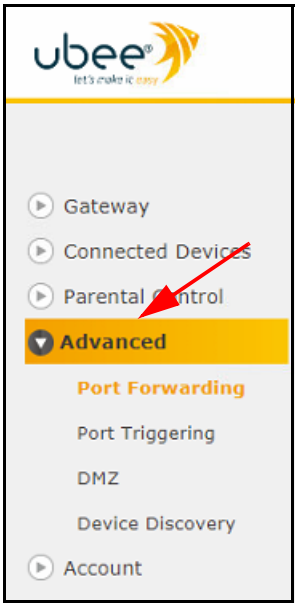
Label	Description
Report Filters	
Report Type	Select which report type(s) you want to generate from the drop down menu. Options are: All, Managed Sites, Manages Services and Managed Devices. 
Time Frame	Select the time frame for the report from the drop down menu. Options are: Today, Yesterday, Last Week, Last Month and Last 90 Days. 
Generate Report	Select to generate the report.
All Reports	
Print	Once you've generated a report, select to print the report.
Download	Once you've generated a report, select to download a copy the report.

7 Advanced

The **Advanced** menu allows configuration of port forwarding, port triggering, routing, DMZ and dynamic DNS.

To access the advanced menu:

1. Access the Web user interface. Refer to Accessing the Web User Interface Locally on page 21.
2. Click **Advanced** from the left side main menu.



See the following topics:

7.1 Port Forwarding

The **Advanced > Port Forwarding** page let's you set up port forwarding rules. Port forwarding maps external IP addresses and ports to internal IP addresses and ports. The specified port is then constantly available for the specific application. Online gaming applications will frequently require you to set up port forwarding rules.

See the following topics:

- Before Setting Up Port Forwarding on page 82
- Setting Up Forwarding on page 82

7.1.1 Before Setting Up Port Forwarding

Try the following options before you assign forwarding rules:

1. Enable Universal Plug and Play (UPnP). This may resolve the issue you have without setting up forwarding rules. To enable UPnP refer to Device Discovery on page 89. Enable UPnP and then test your application to see if it is functioning properly. If not, continue to the reserved IP address option.
2. Assign a reserved IP Address (also called a static lease) to the client/host to which you are setting up forwarding. This way, the IP address does not change and disrupt your forwarding rules. For example, if you are hosting a Web server in your internal network, and you wish to setup a forwarding rule for it, assign a static IP lease to that system to keep the IP from renewing and disrupting the forwarding rule. See Add Device with Reserved IP Address on page 69.

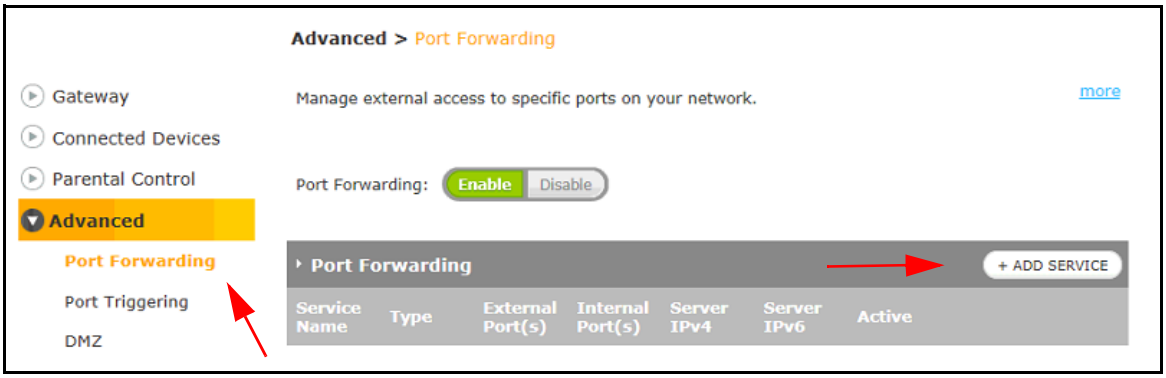
7.1.2 Setting Up Forwarding

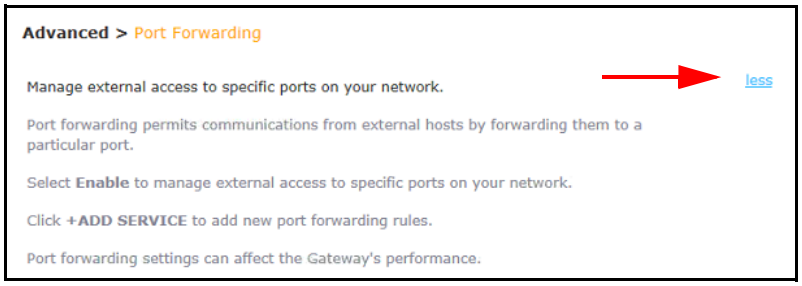
You will need the following information to set up port forwarding:

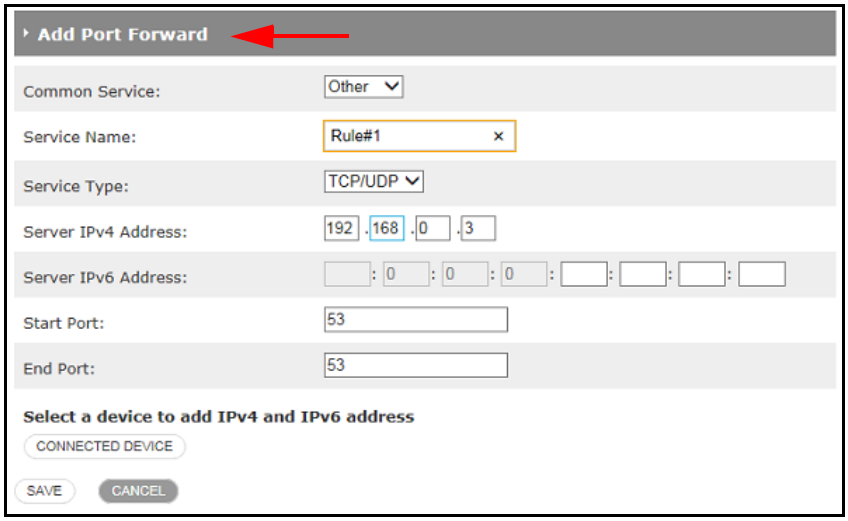
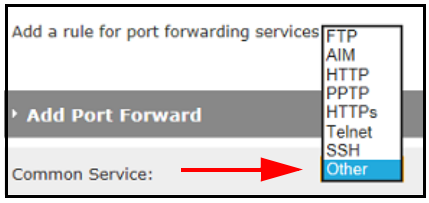
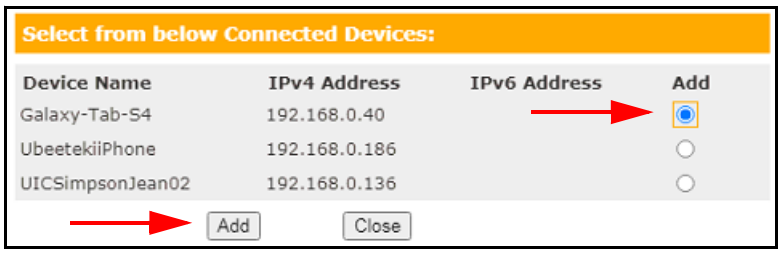
- IP address (IPv4 or IPv6) of each local host system (for example, Xbox) for which you need to setup a port forwarding rule.
- Port numbers the local host's application listens to for incoming requests/data (for example, a game or other service). These port numbers should be available in the documentation associated with the application.

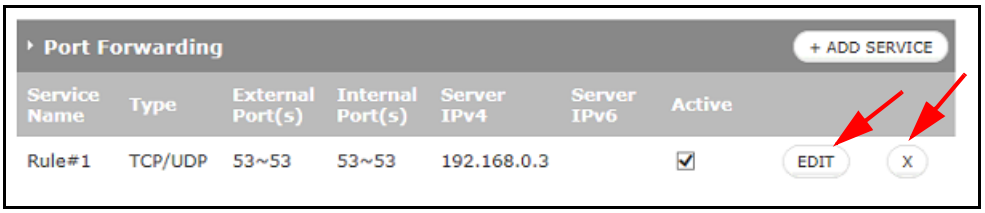
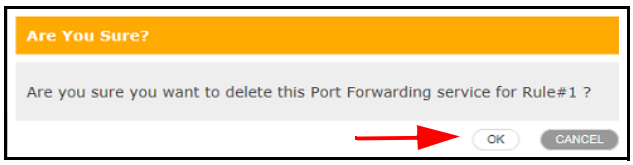
NOTE: For detailed information on port forwarding, including how to set it up for specific applications using specific network devices (for example, cable modems), refer to: http://portforward.com or consult your host device or application user manual.

Port Forwarding Screen:



Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again.  
Port Forwarding	Select **Enable** to turn on the port forwarding feature or **Disable** to turn it off.

Label	Description
Add Service **Add Port Forward**	Click on **ADD SERVICE** to configure a new port forwarding rule:  The Add Port Forward page let's you configure port forwarding rules.  • **Common Service:** Select a service from the drop down menu. Options are:  • **Service Name:** Enter a name for the port forwarding rule in the space provided. • **Service Type:** Select the appropriate protocol: TCP/UDP, TCP or UDP. • **Server IPv4/IPv6 Address:** Enter the IPv4 or IPv6 address (whichever is applicable) of the host device for which you are configuring the port forwarding rule. • **Start Port:** Enter the starting port number of the website or application. • **End Port:** Enter the ending port number of the website or application.
Connected Device	Select **CONNECTED DEVICE** to see a list of devices currently connected to the gateway.  If you wish to add a connected device to the port forwarding rule, check the Add circle to the right of the device and then click Add on the bottom left. 

Label	Description
Save	Select to save the port forwarding rule. The rule is displayed as follows:  • Click **EDIT** to make changes to the port forwarding rule. • Click **X** to delete the port forwarding rule.
Cancel	Deletes the port forwarding rule. You will be asked to confirm your decision. Select **OK**. 

7.2 Port Triggering

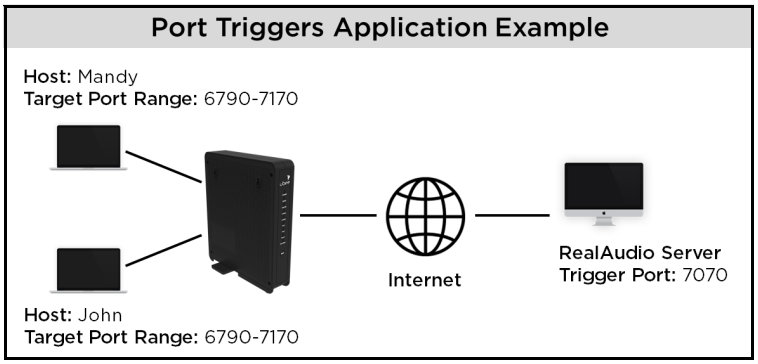
Advanced Settings > Port Triggering let's you configure dynamic triggers for specific devices on the LAN. This allows special applications that require specific port numbers with bi-directional traffic to function properly. Applications such as video conferencing, voice, gaming, and some messaging program features may require these special settings.

Some services use a dedicated range of ports on the client side and a dedicated range of ports on the server side. The difference between port forwarding and triggering is:

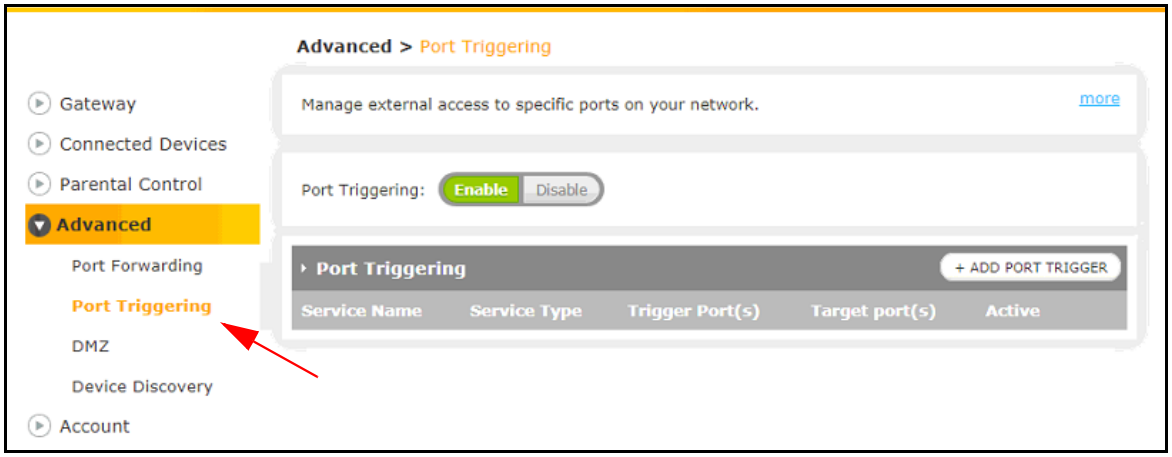
- Port forwarding sets a rule to send a service to a single LAN IP address. The selected ports are always available and IP addresses need to be specified.
- Port triggering defines two kinds of ports: trigger port and target port. The trigger port sends a service request from a LAN host to a specific destination port number. The port the LAN host is required to listen to by the application is called the target port. The server returns responses to these ports. The selected ports are opened when triggered and IP addresses are identified automatically.

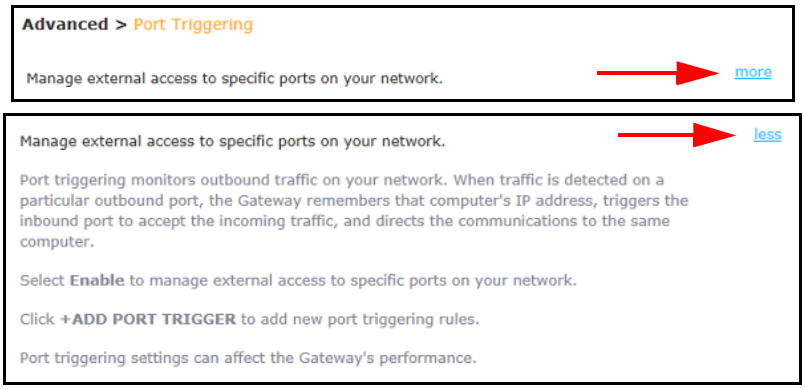
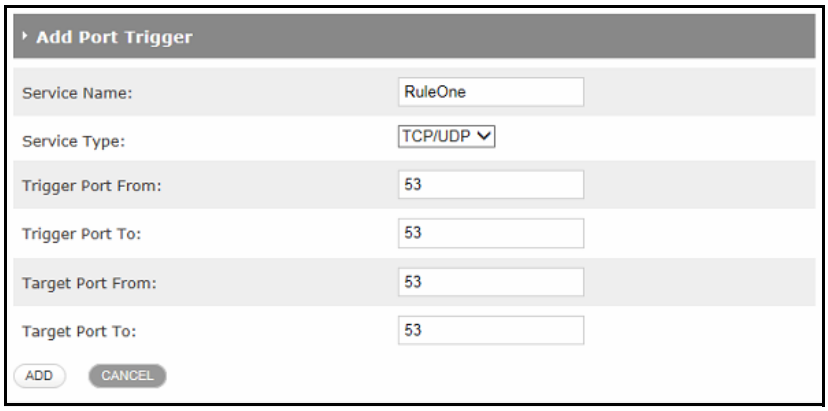
For Example:

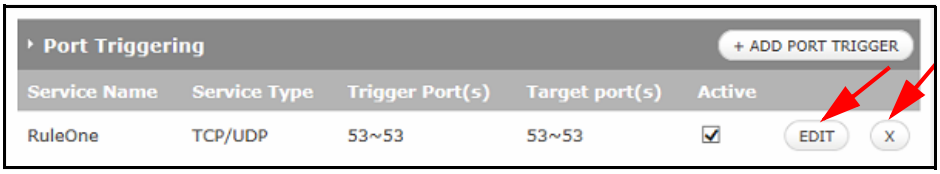
1. John requests a file from the RealAudio server (port 7070). Port 7070 is a "trigger" port and causes the device to record John's computer IP address. The UBC1329AA00 associates John's computer IP address with the "target" port range of 6970-7170.
2. The RealAudio server responds to a port number ranging between 6970-7170.
3. The UBC1329AA00 forwards the traffic to John's computer IP address.
4. Only John can connect to the RealAudio server until the connection is closed or expires.



Port Triggering Screen:



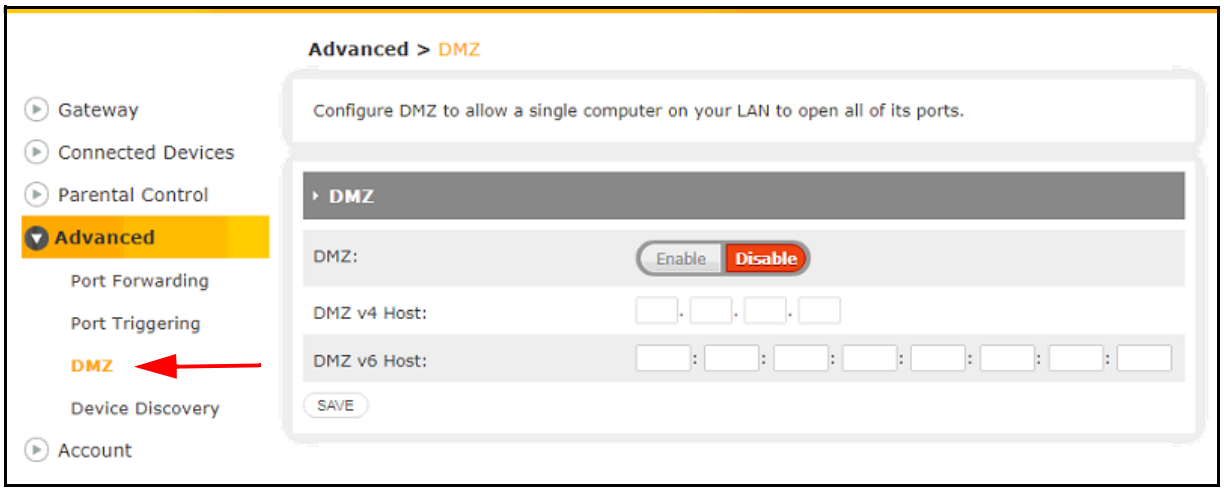
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 
Port Triggering	Select **Enable** to turn on the port triggering feature or **Disable** to turn it off.
Add Port Trigger	Click on **ADD PORT TRIGGER** to configure a new port trigering rule:  The Add Port Trigger page let's you configure port triggering rules.  • **Service Name:** Enter a name for the port triggering rule in the space provided. • **Service Type:** Select the appropriate protocol: TCP/UDP, TCP or UDP. • **Trigger Port From:** Enter the starting trigger port, which is the first port in a range of port numbers that will trigger the rule to start when a connection request from outgoing traffic is made. • **Trigger Port To:** Enter the ending trigger port, which is the last port in a range of port numbers that will trigger the rule to start when a connection request from outgoing traffic is made. **Note:** If only one port is used, enter the same port number in both fields. • **Target Port From:** Enter the starting target port, which is the first port in a range of port numbers that will be opened when triggered. • **Target Port To:** Enter the ending target port, which is the last port in a range of port numbers that will be opened when triggered. **Note:** If only one port is used, enter the same port number in both fields.

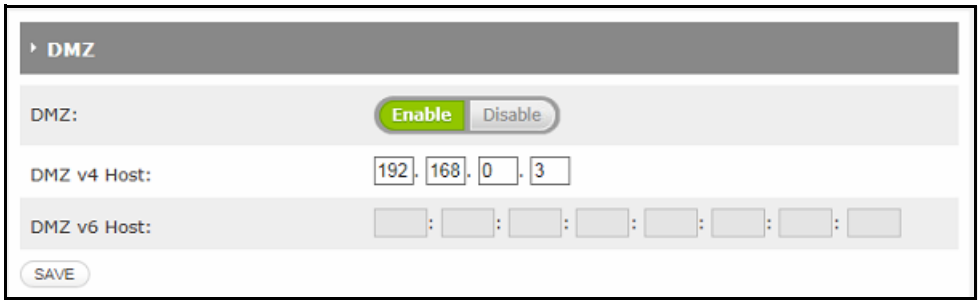
Label	Description
Save	Select to save the port triggering rule. The rule is displayed as follows:  • Click **EDIT** to make changes to the port triggering rule. • Click **X** to delete the port triggering rule.
Cancel	Deletes the port triggering rule. You will be asked to confirm your decision. Select **OK**. 

7.3 DMZ

The **Advanced > DMZ** page let's you configure the gateway Demilitarized Zone (DMZ). A DMZ allows one IP address (or device) to be placed in between the firewall and the Internet (usually for gaming and video conferencing). This allows risky, open access to the Internet. You can use this option when applications do not work with port triggers or other networking strategies.

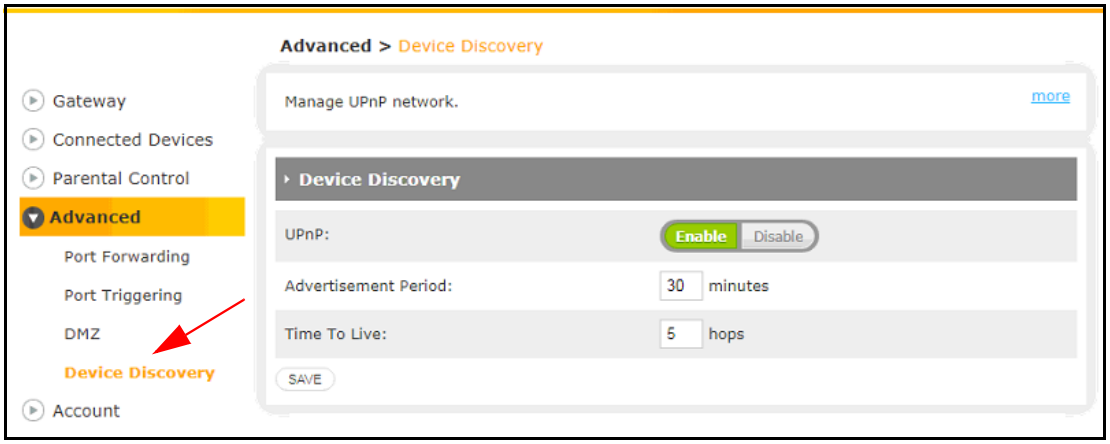
After configuring the DMZ, test the device to ensure Internet access is available and the device is functional. For example, connect to the Internet from a PC connected to the Home Gateway, or make calls from a VoIP phone.

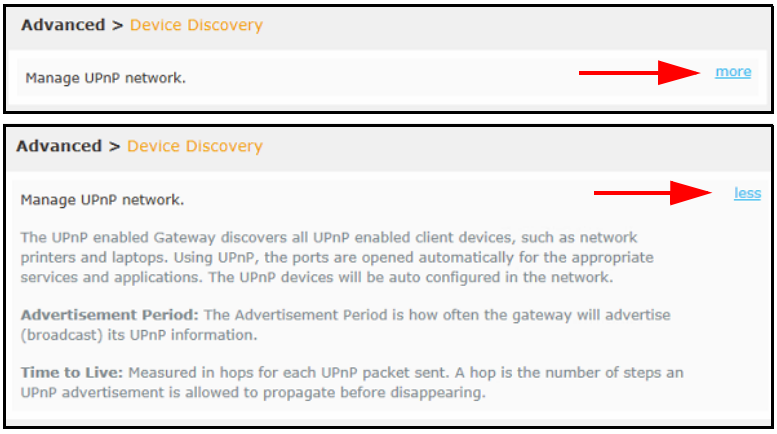


Label	Description
DMZ	
DMZ	Select **Enable** to turn on the DMZ feature or **Disable** to turn it off.
DMZ v4 Host **DMZ v6 Host**	 • **DMZ v4 Host:** If IPv4 is in use, enter the IPv4 Address of the device to be placed in the DMZ. • **DMZ v6 Host:** If IPv6 is in use, enter the IPv6 Address of the device to be placed in the DMZ.
Save	Select to save the DMZ configuration.

7.4 Device Discovery

The **Advanced > Device Discovery** page allows configuration of Universal Plug and Play (UPnP) feature. UPnP helps the gateway automatically discover other UPnP devices, such as computers, printers and even a light switch. With UPnP, the ports are opened automatically for the appropriate applications and services.



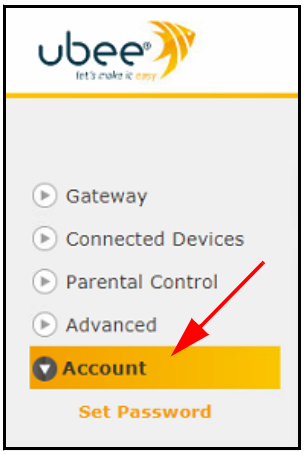
Label	Description
More	When you click on more, a description of the screen information is shown. Click less to shrink the description box again. 
Device Discovery	
UPnP	Select **Enable** to turn on the UPnP feature or **Disable** to turn it off.
Advertisement Period	Set the advertisement period in minutes. This is the length of time between the gateway broadcasting (advertising) it's UPnP information.
Time to Live	The time to live is measured in network hops. Enter the number of hops (the number of steps) an UPnP advertisement is allowed to propagate before disappearing.
Save	Select to save the UPnP configuration.

8 Account

The **Account** menu let's you generate and view logs, test device connectivity, view MoCA connection information, and reboot or restore gateway settings.

To access the troubleshooting menu:

1. Access the Web user interface. Refer to Accessing the Web User Interface Locally on page 21.
2. Click **Troubleshooting** from the left side main menu.

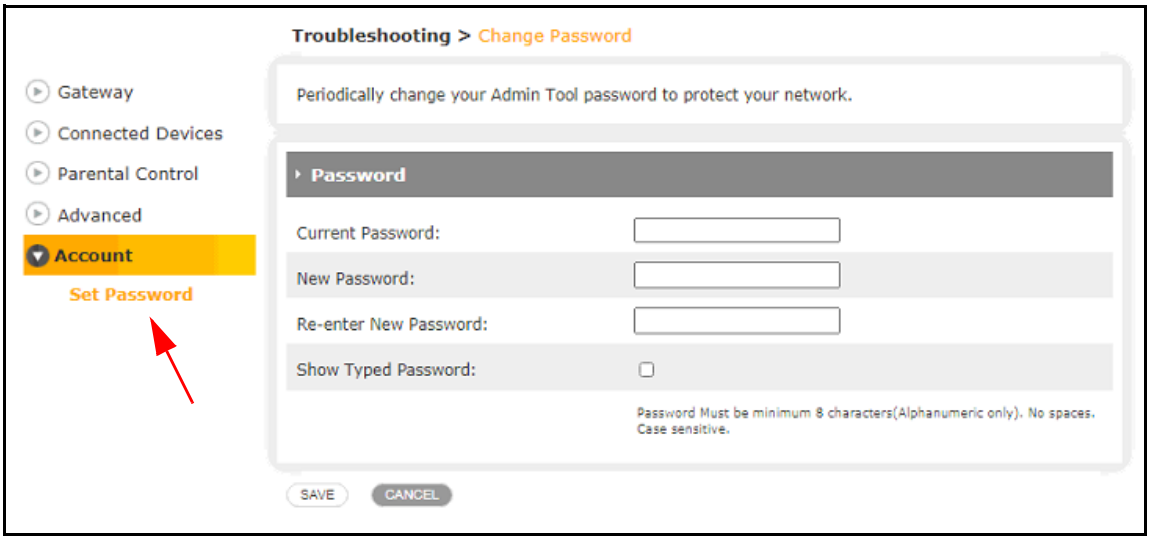


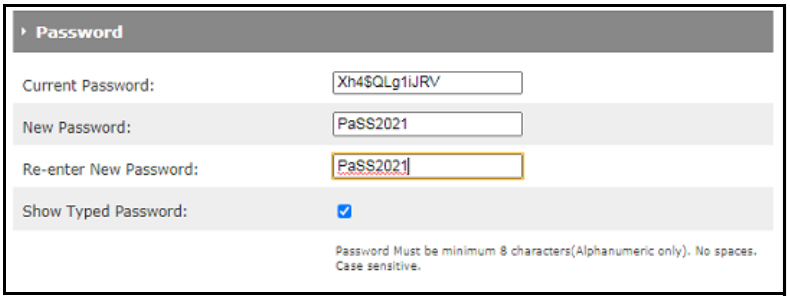
See the following topics:

- Set Password on page 91

8.1 Set Password

The **Account > Set Password** let's you change the GUI login password to a personalized one.



Label	Description
Password	
Current Password **New Password** **Re-enter New Password** **Show Typed Password**	Here you can change the password used for logging into the web UI. • **Current Password:** Enter the current password for the UI. Note that the default password can be found on the device label. • **New Password:** Enter the new customized password. • **Re-enter New Password:** Re-enter the new customized password. • **Show Typed Password:** Check this box to be able to read the passwords you type. If this box is not checked, the characters are shown as dots. 
Save	Select to save the new, customized password
Cancel	Select to cancel the password change.

9 Deploying & Troubleshooting the Wireless Network

The information in this chapter will help you understand, deploy, and troubleshoot your wireless environments:

See the following topics:

9.1 Understanding Received Signal Strength

Received signal strength (RSSI) is measured from connected wireless client devices to the UBC1329AA00. This value can significantly impact wireless speeds/performance. It is determined by:

- Materials (for example, open air, concrete, trees)
- Distance between wireless clients and the wireless cable modem
- Wireless capabilities of the client devices

9.2 Estimating Wireless Cable Modem to Wireless Client Distances

The information in this section helps you to determine how far a wireless cable modem or gateway can be placed from wireless client devices. Environmental variances include the capabilities of wireless clients and the types of material through which the wireless signal must pass. When the wireless cable modem and wireless clients reach the distance threshold between each other, network performance degrades.

To determine wireless gateway placement:

1. Connect a wireless client to the wireless UBC1329AA00. Refer to Connecting a Wireless Device on page 18 if needed.
2. Place the wireless client at around one meter (three feet) away from the UBC1329AA00.
3. Obtain the RSSI value for the connected client. This value is used in the formula further below.
4. Use the following table to determine what materials the wireless signal must travel through to reach the desired wireless coverage distance.
5. Use the following table to determine what materials the wireless signal must travel through to reach the desired wireless coverage distance.

Attenuation Considerations		
Material	Attenuation	
	2.4GHZ	5GHz
Free Space	0.24dB / foot	0.3dB / foot
Interior Drywall	3dB to 4dB	3dB to 5dB
Cubicle Wall	2dB to 5dB	4dB to 9dB
Wood Door (Hollow/Solid)	3dB to 4dB	6dB to 7dB
Brick, Concrete Wall (Note 1)	6dB to 18dB	10dB to 30dB
Glass Window (not tinted)	2dB to 3dB	6dB to 8dB
Double Pane Coated Glass	13dB	20dB
Bullet Proof Glass	10dB	20dB
Steel / Fire Exit Door	13dB to 19dB	25dB to 32dB

Attenuation Considerations		
Material	**Attenuation**	
	2.4GHZ	**5GHz**
Human Body	3dB	6dB
Trees (Note 2)	0.15dB / foot	0.3dB / foot
NOTE 1: Different types of concrete materials are used in different parts of the world and the thickness and coating differ depending on whether it is used in floors, interior walls, or exterior walls. **NOTE 2:** The attenuation caused by trees varies significantly depending upon the shape and thickness of the foliage.		

6. Use the attenuation value from the materials table above in the following formula:

Formula:

(Transmit Power, use -30dBm) – (Receiver Sensitivity, use RSSI value) = Allowable Free Space Loss

Allowable Free Space Loss ÷ Materials Attenuation Value =
Optimal Distance in Feet Between the UBC1329AA00 and a Wireless Client

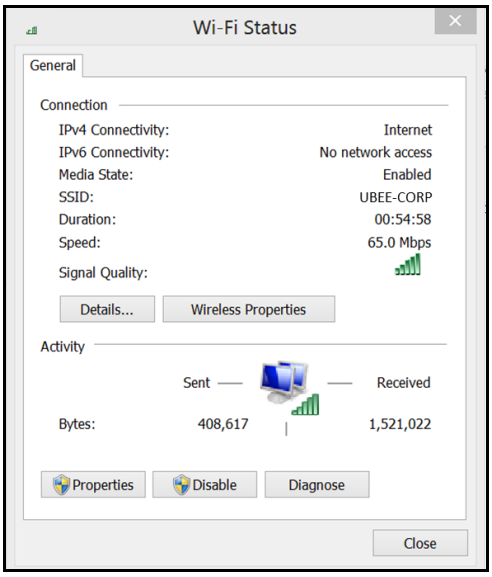
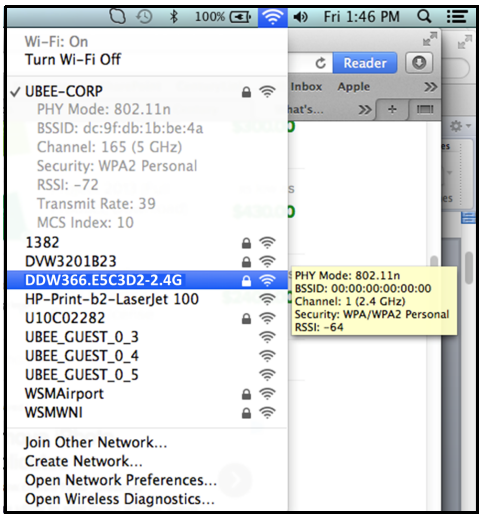
Example:

(-30dBm) - (-67dBm) = 37dBm (allowable free space loss for a 54Mbps connection)

37dBm ÷.24db/foot (for open space) = 154.16 feet

7. Once you know the optimal feet distance between individual wireless clients and the UBC1329AA00, you may resolve and prevent some performance issues.

8. Check the wireless signal strength and speed of the computer connected wirelessly to the UBC1329AA00. Instructions for checking speeds are provided for both a Windows and Mac computer in the table below. If the wireless computer is not connected, refer to Connecting a Wireless Device on page 18.

<table>
<tr><th colspan="2">Checking Wireless Signal Strength and Speed</th></tr>
<tr><th>Windows PC</th><th>Apple Mac</th></tr>
<tr><td>1. Click the Wireless networking icon in the system tray to display a list of available wireless networks.
 
</td><td rowspan="2">1. Hold down the Option key and click on the wireless icon (Airport) on the right side of the top menu bar.
 
</td></tr>
<tr><td>2. Click “Open Network and Sharing Center,” then click “Wireless Network Connection.”</td></tr>
<tr><td>3. Review the speed and signal strength in the Status window.
 
</td><td>2. Information about the current wireless connection appears below the SSID. If you continue to hold the Option key and hover over any network, information about the connection is visible.
 
</td></tr>
</table>

9.3 Understanding the 2.4GHz and 5GHz Bands

The UBC1329AA00 operates in both the 2.4GHz and 5GHz frequency bands simultaneously. This feature allows you to choose the best band for your device to ensure stability with your local and Internet connection.

The table below provides a comparison between the 2.4GHz and 5GHz bands.

Band	2.4GHz	5GHz
Channels	In the USA, channels 1-11 are used. There are 3 non-overlapping channels (1, 6, and 11). Auto channel should be selected to ensure that the channel with the least interference is used.	23 non-overlapping channels.
Standards	802.11b,g,n	802.11a,n
Network Range	Wider range	Shorter Range
Interference	Higher, as many wireless devices such as cordless phones, microwave ovens, and computers use the 2.4GHz frequency.	Lower chance of picking up interference because fewer types of wireless devices use the 5GHz frequency.
Application	Recommended for simple Internet browsing and email, as these applications don't take too much bandwidth and work fine at a greater distance.	Recommended for applications that require uninterrupted throughput, like media streaming. The wider spectrum delivers better performance.
NOTE: If you want to use the 5GHz frequency, all wireless client adapters must support 5GHz.		

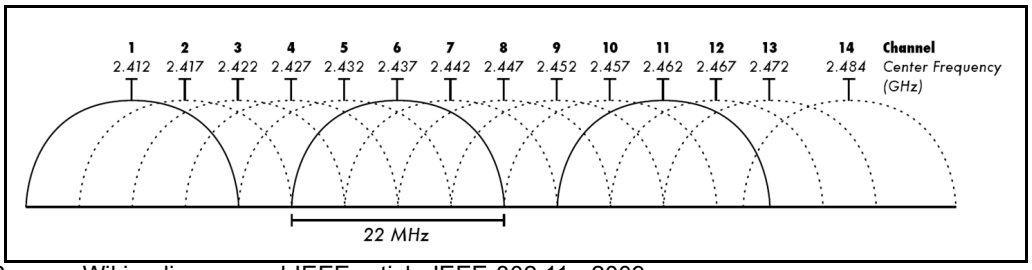
9.4 Selecting a Wireless Channel

You may need to change the wireless channel on which the UBC1329AA00 operates when you are in computing, test, and other environments where several wireless access points may be operating in the 2.4GHz range.

In some cases, you may want to segment your wireless traffic where a group of devices operates on one channel and another group operates on another channel, and so on. This is done by configuring the channel on each wireless access point individually (if you have multiples). If you have control over only one wireless device in an environment where there may be several, you can change the wireless channel on your device to one that is not heavily used.

2.4GHz Channels

The following diagram displays the channels available in the Americas. Each available channel is 22MHz wide. Since channels overlap, it is best to choose channels that have the least overlap (typically 1, 6, and 11 in the Americas, and 1, 5, 9, and 13 in Europe). Overlapping channels can cause wireless network performance issues.



Source: Wikipedia.org, and IEEE article IEEE 802.11n-2009

5GHz Channels

The following table shows the 5GHz channel list and the corresponding frequencies.

Channel	GHz	Channel	GHz
36	5.180	108	5.540
40	5.200	112	5.560
44	5.220.	116	5.580
48	5.240	136	5.680
52	5.260	140	5.700
56	5.280	149	5.745
60	5.300	153	5.765
64	5.320	157	5.785
100	5.500	161	5.805
104	5.520	165	5.825