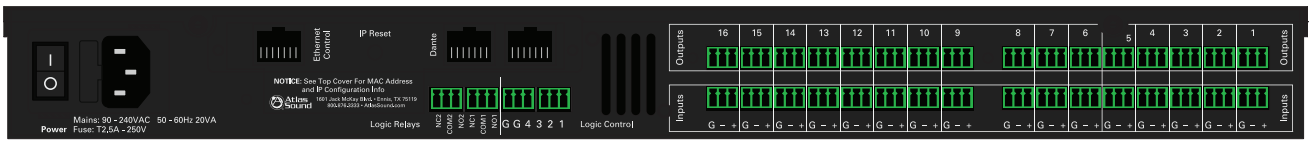
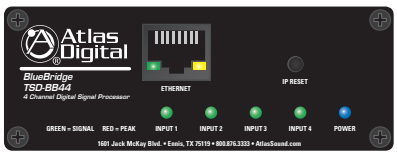
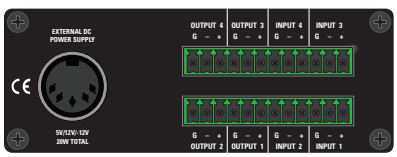
BlueBridge
Networking Reference Guide







This reference guide is designed to show the steps required to connect a BlueBridge device to a network.

Hardware

All BlueBridge devices include an RJ-45 Ethernet connection designed to allow the device to access a network. Do not confuse the RJ-45 Ethernet connection with the digital audio transport connections (labeled Dante) on Dante equipped BlueBridge products since they use the same type of connector.(See figure 1)

Figure 1

Figure 2

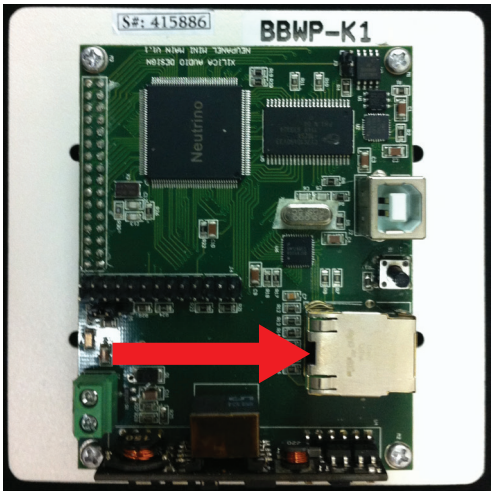


Figure 3

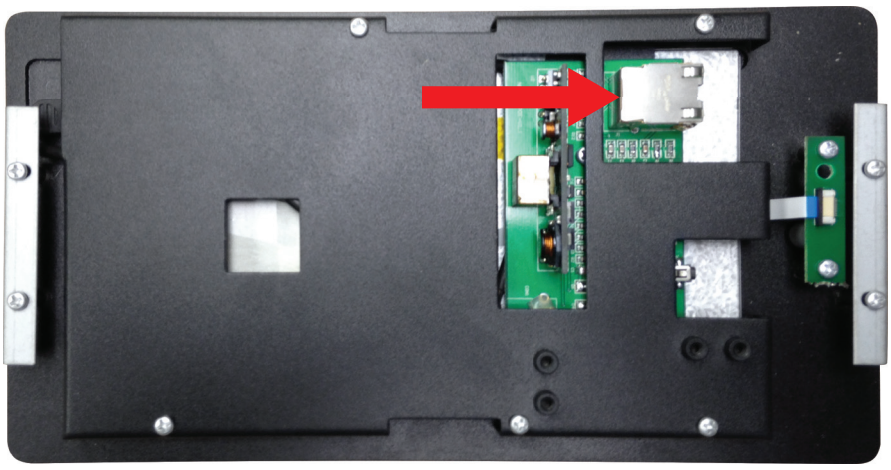


Figure 4

TELEPHONE: (800) 876-3333
FAX (800) 765-3435

BlueBridge audio processors are compatible with off the shelf routers, both wired and wireless, and network switches. Designs that include BlueBridge wall controllers and/or touch panels should incorporate network routers and switches that have PoE (Power over Ethernet) capability, if PoE hardware is not available individual local power supplies will be needed for each device..

Initial Device Connectivity

BlueBridge digital audio processors and control devices are designed to run on a network based infrastructure and are set-up and controlled by a host computer via Ethernet using the BlueBridge Designer software.

A network connection can be made between the computer and BlueBridge hardware using a DHCP enabled Router, a DHCP enabled Server/Router combination, directly using an Ethernet cable, or indirectly via an Ethernet switch and cable. The primary difference between these connection methods is the automatic IP address assignment that DHCP provides.

In most cases installation using BlueBridge hardware connected to a quality DHCP enabled router will require little time.

*** NOTE: It is recommended the DHCP enabled Router/Switch gear be turned on first, and all Ethernet cables connected to the BlueBridge hardware prior to powering on the BlueBridge hardware. This allows for proper handling of IP address distribution to the BlueBridge hardware.*

Examples of Common Setups

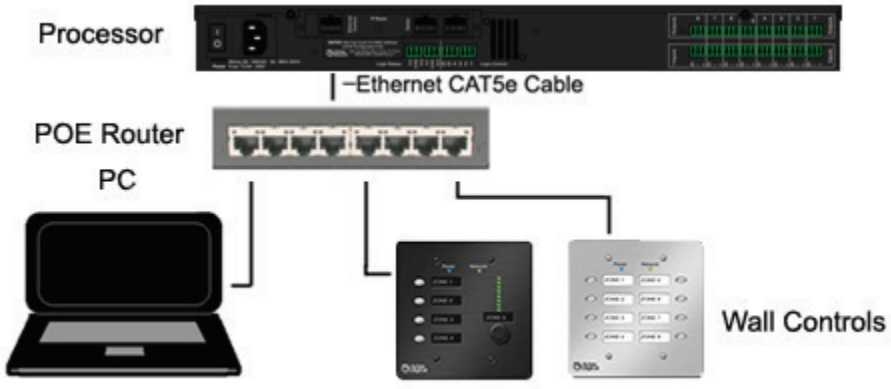


Figure 5

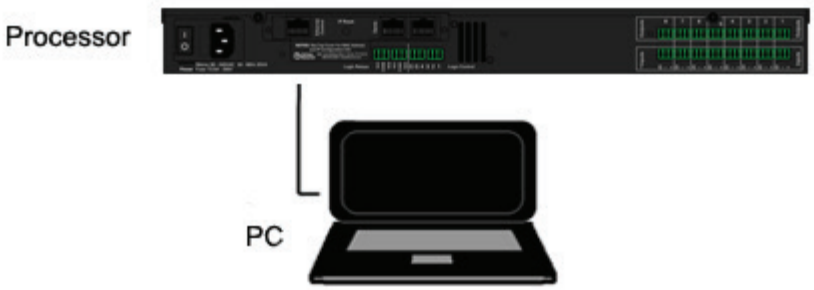


Figure 6

All wired connections utilize a standard RJ-45 Ethernet connection. (See figure 7)

The host PC or PC running BluePanel can also be connected wirelessly using a Wi-Fi connection.

Figure 7

DHCP Enabled Router or Server/Router Combo Connection:

The BlueBridge processor device boots up with DHCP enabled by default so with DHCP enabled routers and servers BlueBridge will automatically obtain an IP address upon connection and power up. It may take a few minutes for the BlueBridge device to obtain an IP address as it must search for a DHCP router or server that can assign it an IP address.

This is by far the best method of connection whenever there is no specific need or reason to assign IP addresses manually. BlueBridge wall controls and/or touch panels must be connected to the same networkv as the audio processor they are controlling. PoE routers should be used with wall controllers and touch panels to avoid the cost of installing local power supplies for each device.

Where there is a need to manually assign an IP address, this can be accomplished in the Network View. Right click on the device and select Device Setup to make changes to the network connections. (See figure 8)

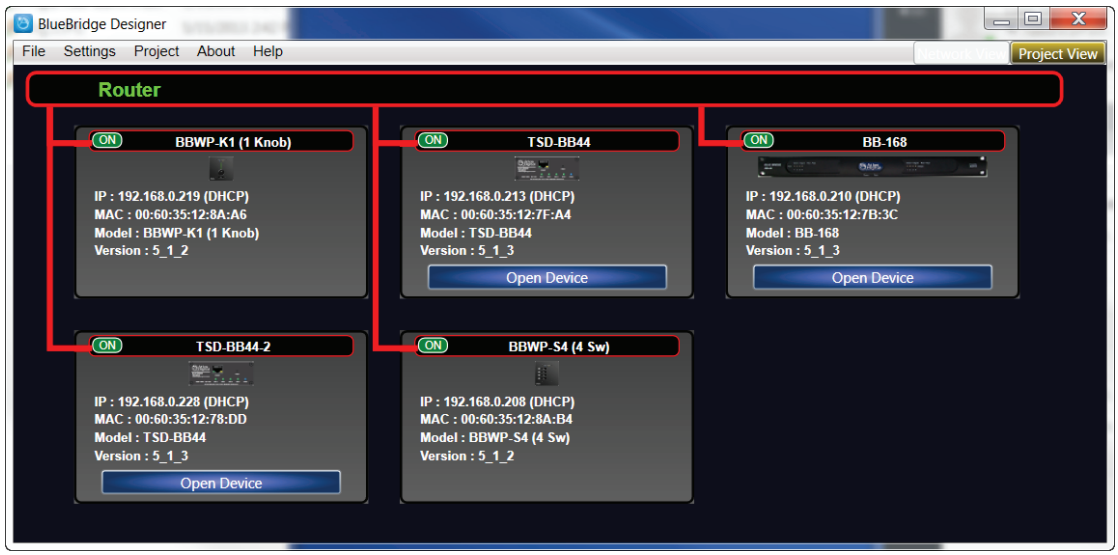


Figure 8

TELEPHONE: (800) 876-3333
FAX (800) 765-3435

Manual Assignment of IP Addresses:

There are applications that require or prefer the IP addresses be manually assigned. In some instances when there is a connection issue, manually assigning the IP address may resolve the problem.

Access the Network View to manually assign IP addresses. Right click on the target device and select "Device Setup".(See figure 9)

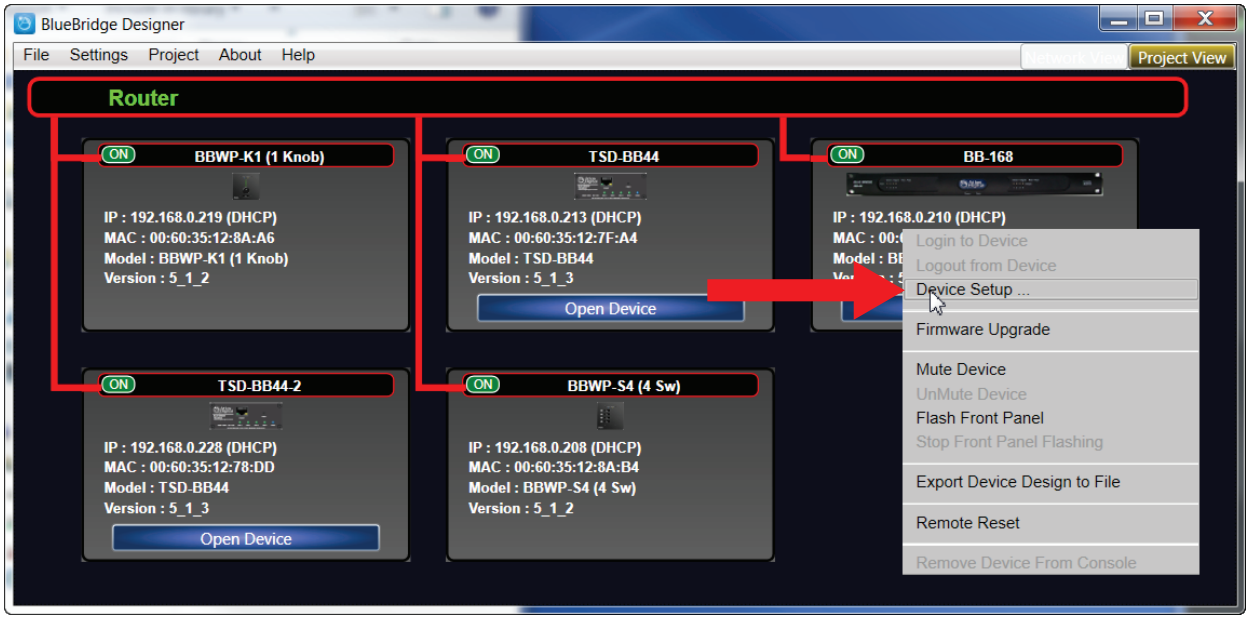


Figure 9

The NetworkDeviceDetail window will open. (See figure 10) In the Network Properties window select "Change Network Configuration"

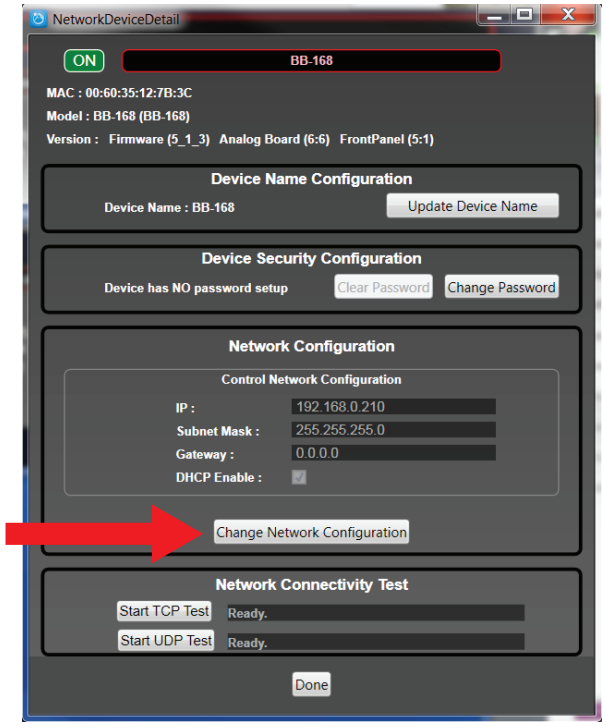


Figure 10

Disable DHCP by checking the box, and insert the required IP address manually. (See figure 11)

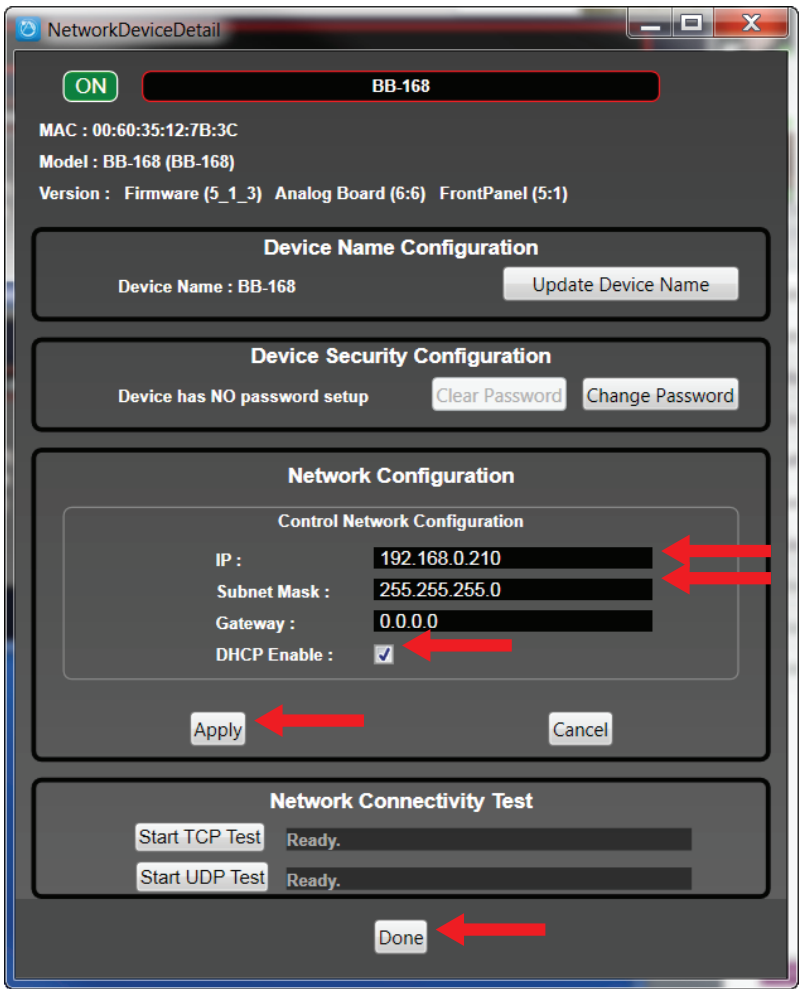


Figure 11

When finished, select "Apply" to save changes and then "Done" to exit. (See figure 11-12)

TELEPHONE: (800) 876-3333
FAX (800) 765-3435

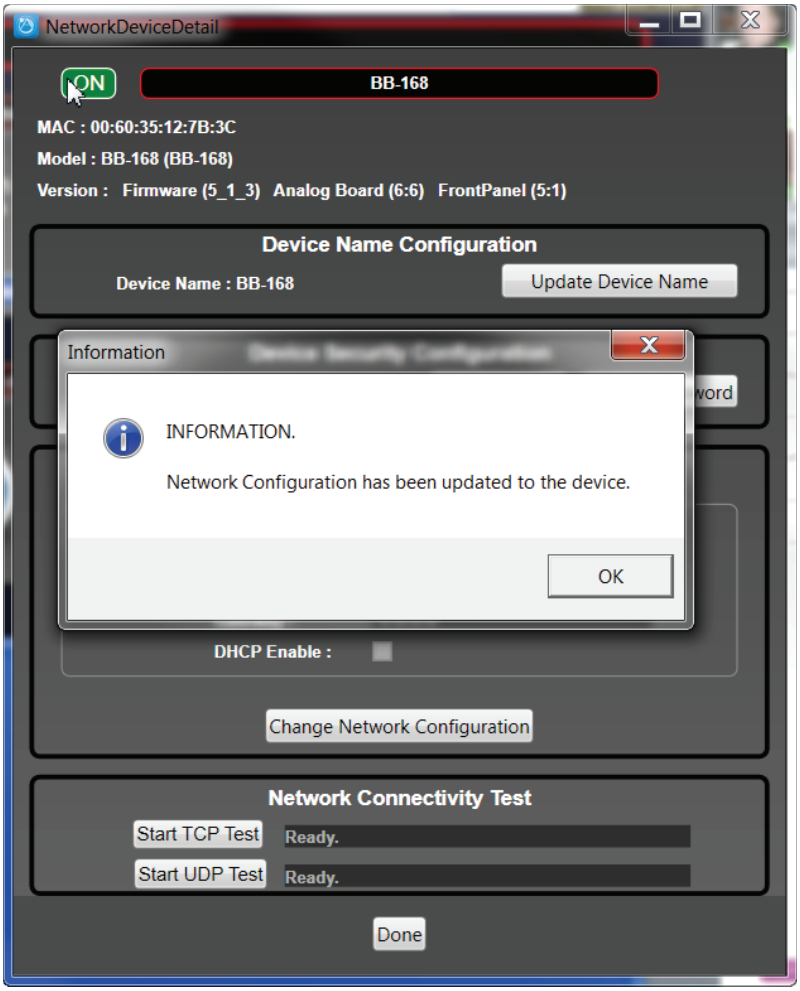


Figure 12

Direct or Indirect Connection

When the BlueBridge processor is connected directly to a computer or indirectly via a switch, DHCP is not available to assign IP addresses the BlueBridge device will revert to its default IP address (169.254.128.128) and the BlueBridge Designer software will automatically connect with the device when no DHCP is detected.

**Note: Most computers will allow direct connection to the BlueBridge device using a standard CAT5 cable. Some older computers may require the use of a Crossover (Patch) cable to connect to the BlueBridge device. If a connection cannot be made using a CAT5 cable, use a Crossover cable.

Use the "Network View" when there is a need to manually assign an IP address. (See examples in the section above).

Processor Device Connected

With the BlueBridge audio processor(s) and BlueBridge control devices connected to a network or directly to your computer, you can power up all devices. On power up, the blue LED power indicator will illuminate. (See figure 13)

If the BlueBridge hardware has an Ethernet cable or network cable connected, the orange Network Status LED on the front of the processor will illuminate once the processor initializes. If there is no Ethernet or network cable attached it will remain Off. (See figure 13)

Figure 13

Blue LED

Orange LED

Note: The orange network status LED does not indicate that a network connection has been established.. It only indicates that an Ethernet or network cable is connected to the processor. Proper network connection and operation is only displayed and confirmed in the software's Network View page. (See figure 14)

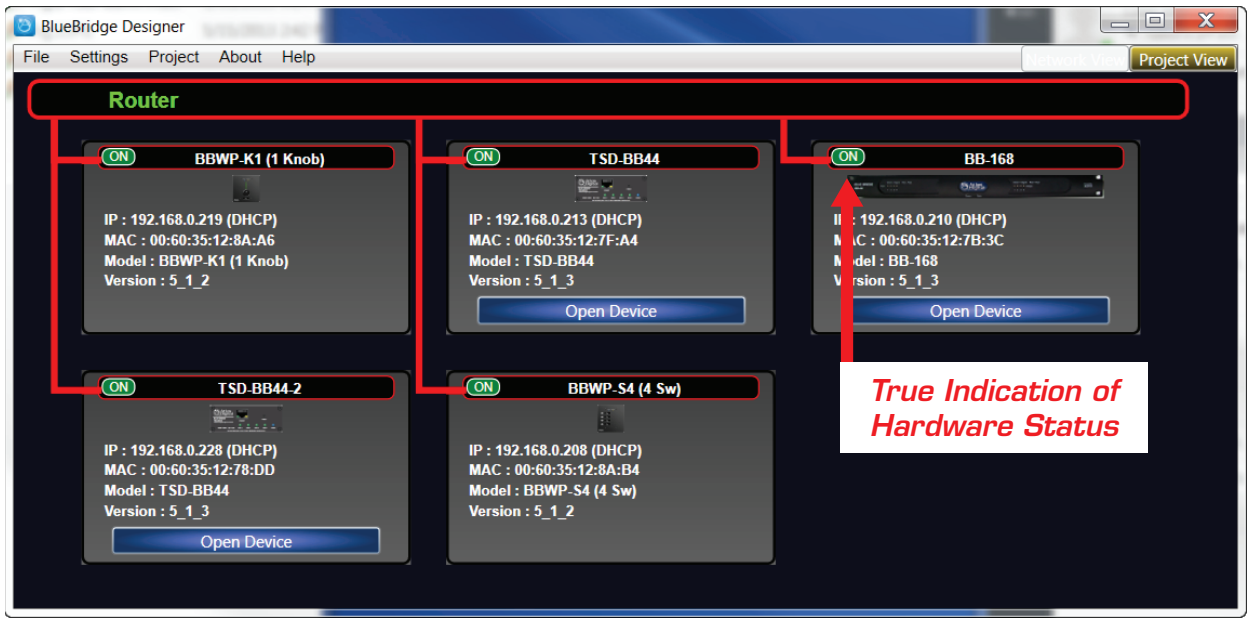


Figure 14

When powered up, the processor will search for a DHCP server to obtain an IP address. If it locates the DHCP server it will quickly connect. If the processor does not find the DHCP server, the processor will revert to its default IP address (169.254.128.128). This may take a few minutes to accomplish.

When the processor and software are connected and commands are being sent to the device the orange Network status light will flash. (See figure 15)

Figure 15

Flashing Orange LED

TELEPHONE: (800) 876-3333
FAX (800) 765-3435

Launch the BlueBridge Designer

Upon opening the BlueBridge Designer software you will be shown the "BlueBridge Designer StartUp" window. It provides three possible selections; New Design Project, Open Design Project, and Start Network View. (See figure 16)

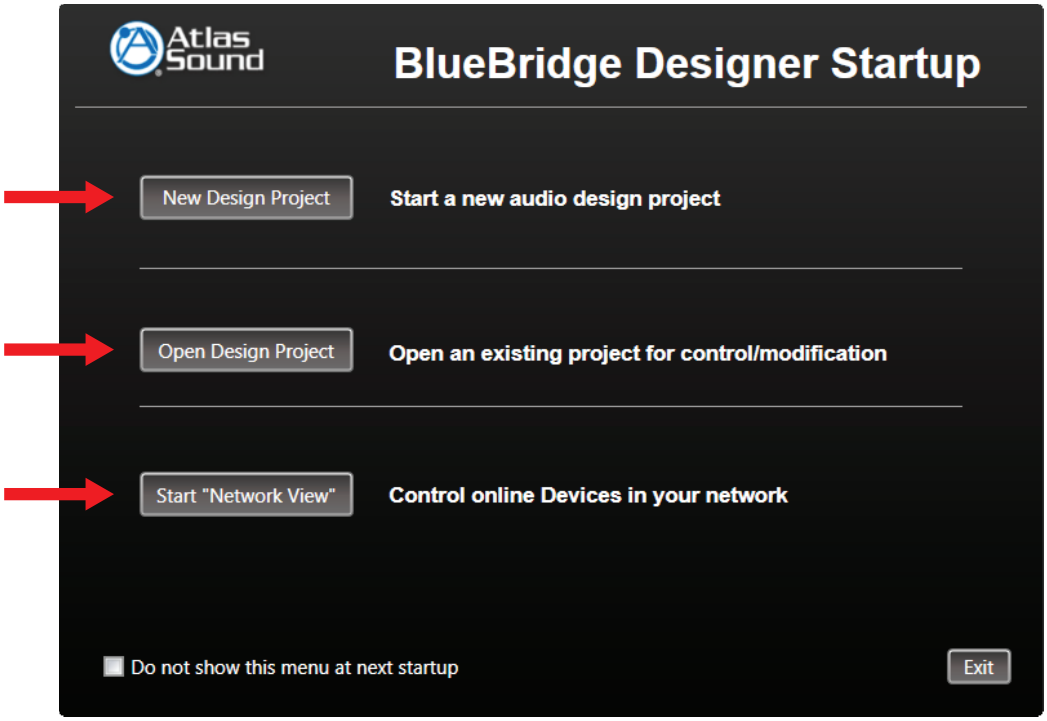


Figure 16

Network View will also be available as a separate button located at the top right of the main BluePrint page. (See figure 17)

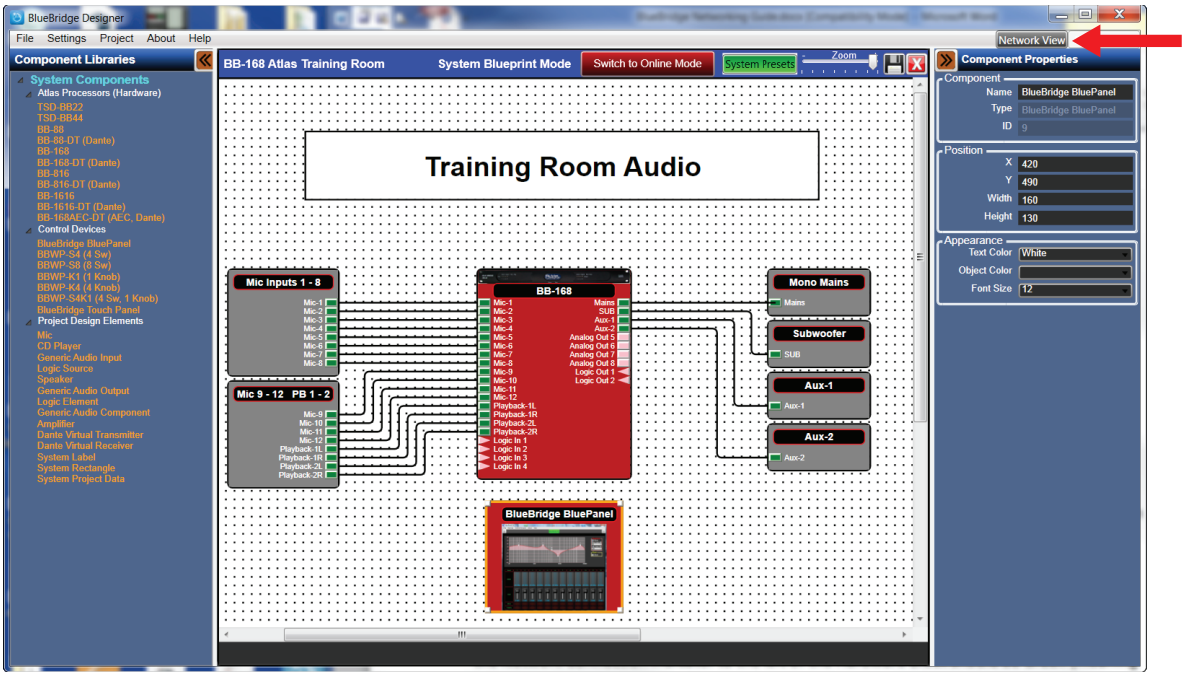


Figure 17

Network View

Click Start "Network View" from the BlueBridge Designer Startup window. (See figure 18)

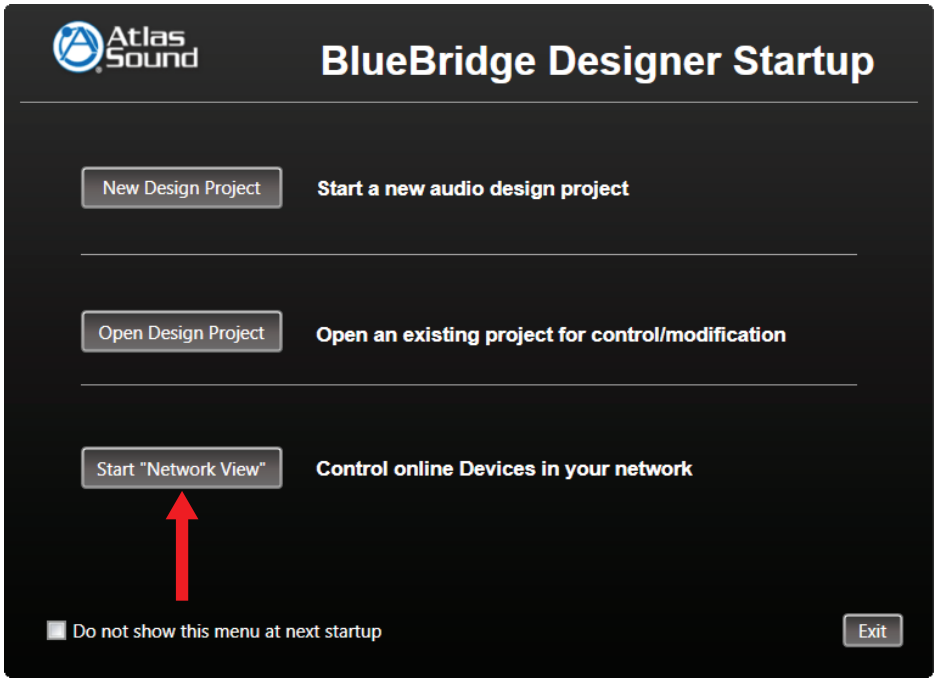


Figure 18

The Network View displays all BlueBridge devices connected to the network and information including the processor name, device model, a green, yellow or red network connection indicator, the IP and MAC address, and the BlueBridge Designer software version. (See figure 19)

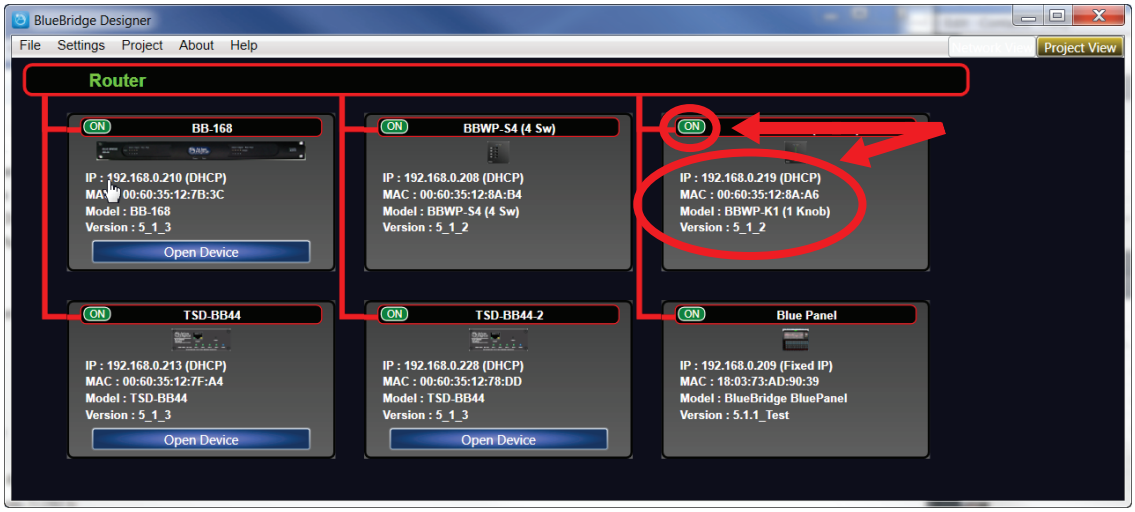


Figure 19

The BlueBridge devices connected to the router block are visible in the Network View. The Network Connection Indicator in the left corner of each hardware block should be Green if it is connected and operational.

If the device has NOT properly connected to the network the Network Connection Indicator n the left corner will be Yellow or Red indicating a connection or operational problem.

TELEPHONE: (800) 876-3333
FAX (800) 765-3435

Network Connection Indicators

Green: Connected and operational.

Yellow: Connected and online, but NOT operational.

Red: The device is offline with no communication between the BlueBridge Designer software and the hardware. This could be a temporary offline interruption if the processor is busy performing a firmware upgrade or the processor is re-booting. Check device cables, connections, and power if the network connection indicator is red. (See figure 20)

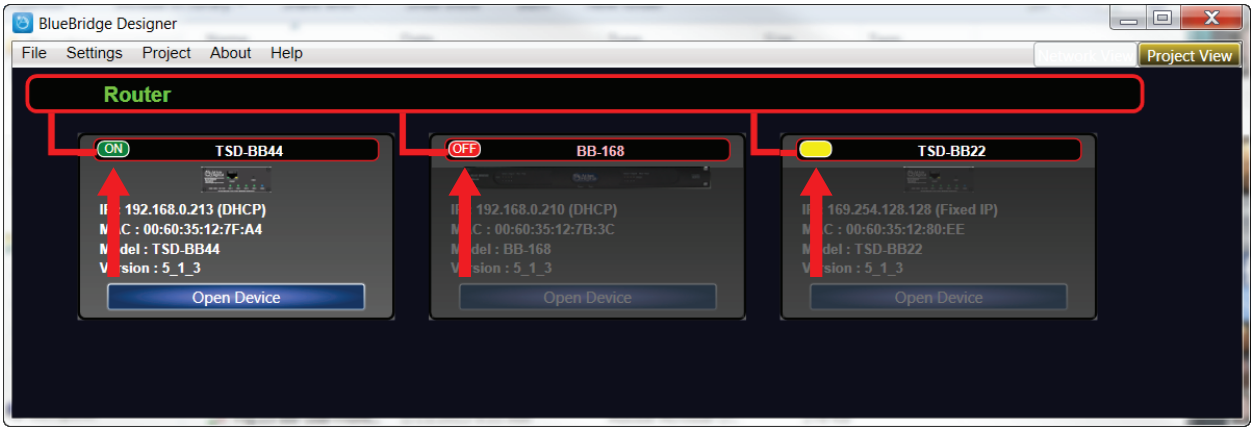


Figure 20

Connection Problems

Yellow Network Connection Indicator: While in Network View if there is a Yellow network connection indicator in the left corner of the BlueBridge Hardware Block, the device is connected and online, but NOT Ready and NOT Operational.

There are a number of network problems that can cause the Network Connection Indicator to be Yellow.

Use the mouse to hover over the device. A pop up tool tip message will appear identifying the issue. (See figure 21)

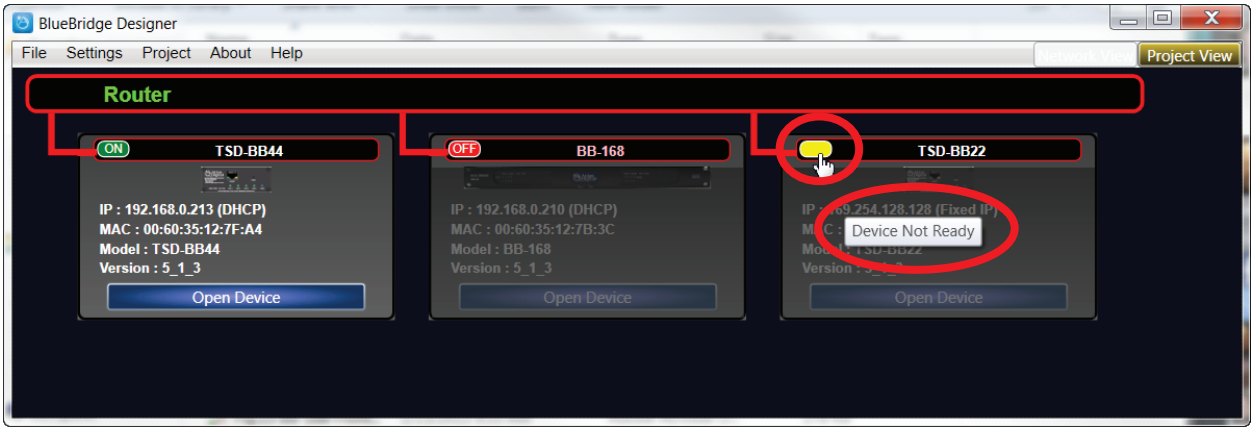


Figure 21

Possible causes include: The BlueBridge device is not connected to a DHCP enabled router or server. When the BlueBridge hardware detects a non-DHCP enabled server it will revert to its Default IP Address (169.254.128.128). If the default IP address is visible in the Network View, close the BlueBridge Designer software and the reopen it. This software "restart" will generally resolve the issue and the Network Connection Indicator should display Green indicating the device is connected and operational.

In some instances, after restarting the software the connection indicator may remain Yellow. In this instance it is possible that the device has retained a previously assigned IP address and not allowing the processor to revert to its default IP address. Reset the devices network settings and password to resolve this issue.

Device Schematic or Design File Not Ready

If the Popup Tooltip message displays "Device Schematic or Design File Not ready" the device has already been loaded with a BlueBridge Design file. Give the connection process a minute to connect and if it does not connect, close the BlueBridge Designer software, open it again, and select Start Network View. The device should display as connected and operational, indicated by the Green network connection indicator in the left corner of the hardware block.

DSP Processing Error

If the Popup Tooltip message displays "DSP Processing Error" this could be a bad Design File. Reload the Design File and restart the device to reset its DSP chip.

Device NOT READY

Restart device. Restart software.

Error in Firmware Upgrade

Error code will display in Network View. Perform the firmware upgrade again.

If the device can communicate to BlueBridge Designer with UDP, but cannot communicate with TCP, it is a network setup issue.

TELEPHONE: (800) 876-3333
FAX (800) 765-3435

IP Reset Push Button / Reset Processor Network Settings and Password

The BlueBridge device must be turned Off and the BlueBridge Designer software must be closed before the IP address or network settings and password can be reset.

Each BlueBridge device includes a manual push button "IP Reset" switch. (See figure 22)

Figure 22

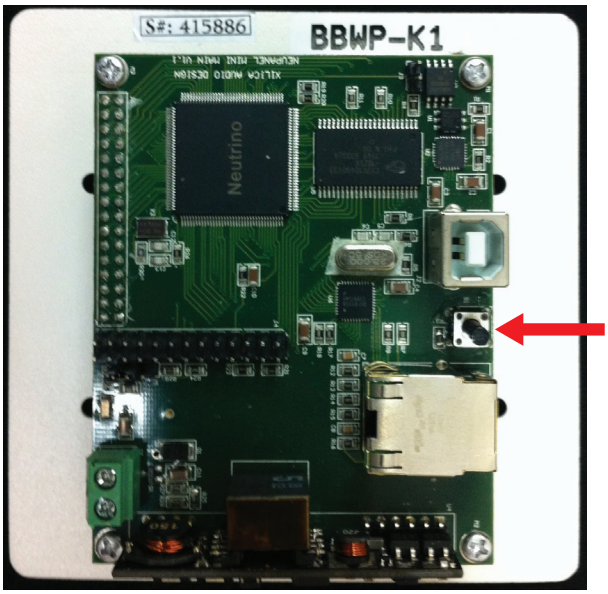


Figure 23

Push the IP reset button using the point of a pen or other small pointed object.

Hold the IP Reset push button and power up the device. Wait 5 seconds after power up and then release the IP Reset button.

Wait for the hardware to completely power up, initialize, and set its default IP address. Open the BlueBridge Designer software and select "Start Network View" again.

In Network View, once the hardware and software communicate with each other, the Green network connection indicator will be illuminated to the left of the processor device model indicating that it is connected and operational. Notice the default IP address of 169.254.128.128 is shown.

***Note: Some BlueBridge units were manufactured with an IP Reset switch hidden behind a removable cover on the rear of the unit. If your device has this type of switch, follow the instructions below to reset the devices IP network settings and password.*

Remove the small black cover on the rear of the unit near the Ethernet connector and remove the two small screws. Looking from the back of the unit noice the small black Reset Switch to the right of the Ethernet connector. Press this Reset Switch forward lightly with your finger and while holding it pressed forward power up the hardware. Wait 5 seconds after power up and then release the Reset Switch. Wait for the Hardware to power up completely. It will take a minute or so to power up as it initializes and sets its default IP address. Open the BlueBridge Designer software and select "Start Network View" again.

In Network View, once the hardware and software communicate with each other, the Green network connection indicator to the left of the processor device model will illuminate indicating that it is connected and operational. Notice the default IP address of 169.254.128.128 is shown.

Determining Network Information

This section deals with Microsoft® Windows® and determining the network information for programming BlueBridge devices.

First from the Start Menu open the command prompt or "cmd".

This can be done by typing cmd in the search programs and files box. (See figure 24)

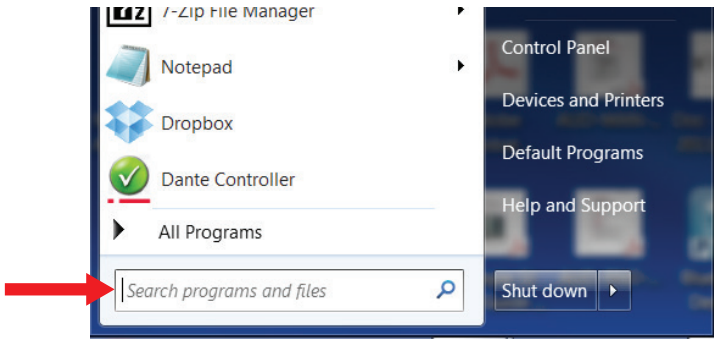


Figure 24

In the newly opened 'Run' window, type 'cmd' into the 'Open' box. Hit enter or click 'OK'. (See figure 25)

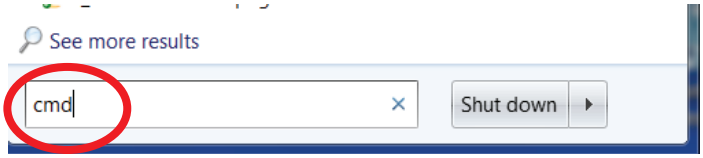


Figure 25

The command prompt screen will display the TCP/IP Network Configuration information. (See figure 26)

***Note: If you have Windows® 8 press the Windows® key and the "r" key and the Run window will pop-up. Then type cmd and a command prompt window will open. Now follow instructions below.*

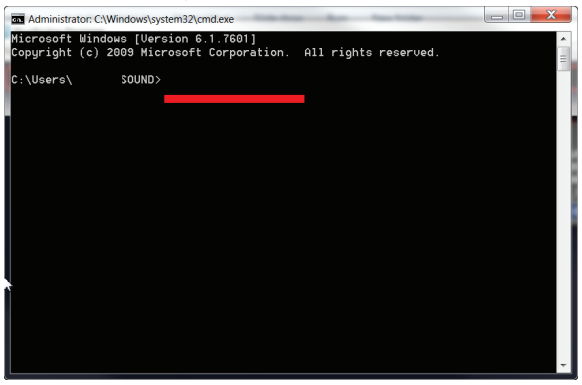


Figure 26

TELEPHONE: (800) 876-3333
FAX (800) 765-3435

Type 'ipconfig/all' (No Quotes) and hit enter. (See figure 27)

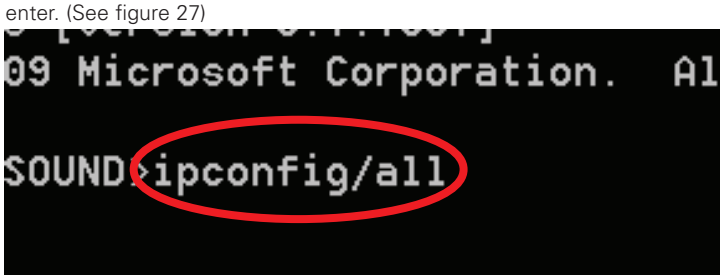


Figure 27

From this list of values, locate the network's 'Default Gateway', 'IP (IPv4) Address' and 'Subnet Mask' values. (See figure 28)

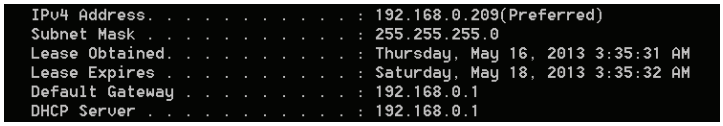


Figure 28

To determine an IP address for the BlueBridge device, utilize the first 3 values (Octets) of the 'IPv4 Address' and select the desired value for the fourth Octet. Ensure that the value is unique to any other system on your network. Reference the IP address (IPV4) of the PC in the TCP/IP Network Configuration menu for an example of how the IP address should be structured.