



BlueBridge Designer II User Guide



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Introduction

The following is a help resource to be used with AtlasIED BlueBridge series of processors. The intent of this guide is to assist you in connecting and setting up your processor and control network as to be used in your project location.

While BlueBridge Designer is designed to be user friendly, this is a technical product that may require some further learning and assistance. Upon thorough completion of this guide, please visit www.AtlasIED.com for further material, including video tutorials. This guide will have a heavy focus of the BlueBridge family of processors. The BlueBridge Designer software is universal in use to the whole series of processors.

All BlueBridge Series processors contain the following in each box:

- AtlasIED BlueBridge Processor Power Cord
- USB Thumb Drive with Software Quick Start Guide

The factory design file is a basic input pass-through with a Matrix Mixer installed. This is to help assist you with basic troubleshooting before you begin your project. The included USB thumb drive contains the BlueBridge Designer software which is required to connect to hardware processors. The BlueBridge Designer software is constantly updating and improving. It is recommended to check the AtlasIED website FREQUENTLY for update as there may be critical updates available. BlueBridge Designer software and firmware versions are forward and backwards compatible, however it is HIGHLY recommended to have the latest version installed to prevent any problems that may arise from inconsistency. New features will not work on old platforms and you may experience unexpected results.

The following are required to work with a BlueBridge device:

- MAC or PC with a Processor 1GHz or Higher
- macOS 10.13, 10.12, 10.11, 10.10, 10.9, 10.8.5, Windows 10, 8, 7, Vista, or XP
- 500MB of Free Space
- 1GB Graphics Card
- 4GB of RAM
- Ethernet Interface



BB-1616



BBWP-TOUCH7B



BBWP-K1B



BBWP-K4



BBWP-S4B



BBWP-S4K1B



BBWP-S8B



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Introduction

The BlueBridge family of DSP Hardware consists of many components.

Processor Units:

- BB-88, BB-816, BB-168, BB-1616
- BB-88DT, BB-816DT, BB-168DT, BB-1616DT, BB-168AECDT
- TSD-BB44, TSD-BB22

Controllers:

- BBWP-K1 Single Level / Value Controller
- BBWP-K4 Four Individual Level / Value Controllers
- BBWP-S4 Four Button Controller
- BBWP-S8 Eight Button Controller
- BBWP-S4K1 Four Button Controller with a Single Level / Value Controller
- BBWP-TOUCH7 Seven Inch Touch Panel Controller

Expander:

- BB-EB1616DT Breakout Box

Site Manager:

- BB-SM1 Scheduler, Web Browser Based Controller, and RS232 Control Portal

BlueBridge Control:

- iOS App Based Controller for iPhone and iPad
- Android Based Controller
- MAC or PC Based Controller

You can learn more about all of our products on our website from a selection of resources including spec sheets, tutorials and user manuals.



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Glossary

BlueBridge Designer II - The Software program used to create a Design Template to load into a AtlasIED BlueBridge series DSP device.

Hardware Module (Block) - The virtual representation of hardware within the BlueBridge Designer interface.

Online Mode - The state when the design file is loaded into the designated hardware and ready for use. At this point the unit is "Live" and all changes can be heard in real time.

Component Library - This navigation panel within BlueBridge Designer has 2 modes. In the Project Design mode it will show the available System Components and Hardware Modules that can be used in the project. Once a DSP module has been placed in the design and opened, the Component Library changes to show the available DSP Modules that can be placed within a BlueBridge Device.

Component Properties - This navigation panel within BlueBridge Designer allows the user to make changes to all of the elements in the design. These elements can include Component Name, Position, Appearance, Number of Inputs/Outputs etc. This panel will also track the Component Resource Usage of the DSP Device.

Design Template - A pre-configured design that can be used as template to create a new custom design. These files can save the designer a lot of time. Go to www.AtlasIED.com in the product section to see additional designs if they are not listed in the software. Note: Design Templates are not to be confused with the term APPs that are used in other DSPs. An APP is a fixed designed that cannot be reconfigured.

Network View - This Button displays the "Network View" page showing all of the DSP hardware and control devices that have been found on the Network.

Project View - The Icon for the DSP processing module that is used/placed inside the DSP Device (Hardware) Block. There are many DSP modules to select from such as Meters, Delays, EQs, Filters, and Mixers to name a few.

Control Page - A window or several windows with control elements, ie: faders, buttons, meters, etc. used to create a custom user interface experience.

Control Device - Hardware devices or BlueBridge Control software used to control system settings configured with control pages with the BlueBridge Designer software.

Device Resource - Indicates the amount of DSP resources used for the selected DSP hardware or individual processing blocks. This can be found in the Component Properties navigation pane. This can be viewed while Online or Offline for Hardware resources, and Offline for the processing blocks. There is a resource button on the top of the window of an open hardware block when in Online Mode.

System Presets - Preset values for audio routes, volumes, EQ etc can be created and stored in the system design for recall when needed i.e. Scenes.

Dante - Digital Audio Transport System designed by Audinate to transport uncompressed full bandwidth audio over standard gigabit network hardware.

Digital Trim - Fine adjustment of input signal Post (after) the Analog Input stage.

Analog Trim - Fine Adjustment of the analog Mic/Line preamp (before) the A/D converter.

Auto Wire - The method used to wire Hardware and Processing Blocks without having to navigate a "point to point" wiring system. Wires can be adjusted and labeled if desired after blocks are connected.

Wire Label - A way of identifying wiring for an audio system design. Can be done in the Component Properties when selecting a wire that has been brought into a design.



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Feature Location

Figure 1 shows the BlueBridge Designer work area. This is called Design Mode.

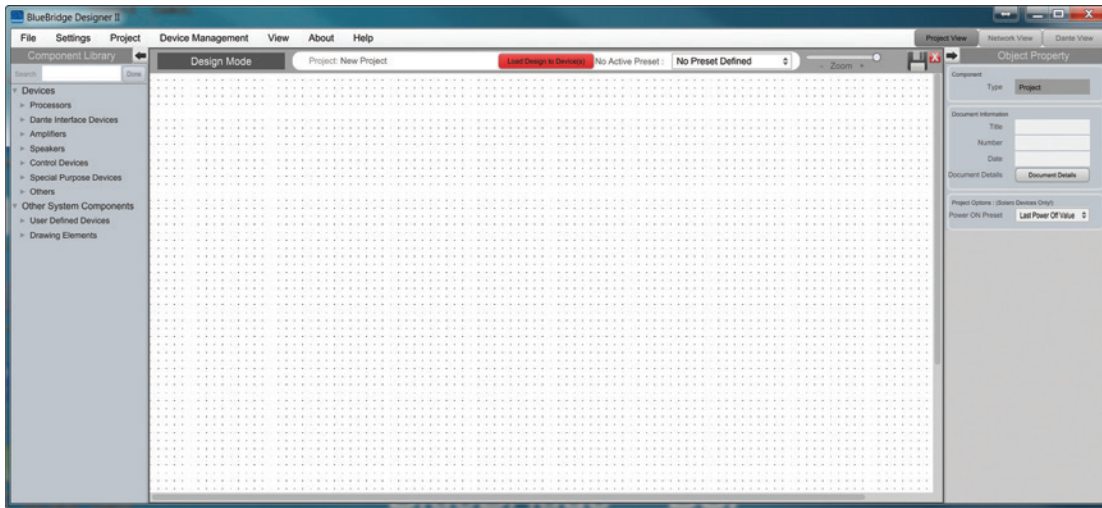


Fig 1

Figure 2 shows the BlueBridge Designer software with a BB-88 hardware module opened.

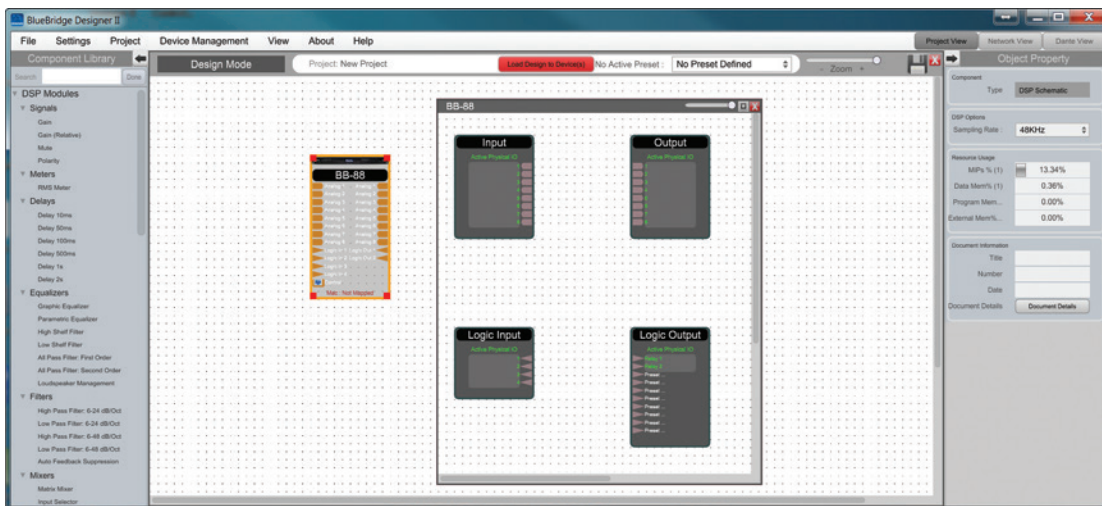


Fig 2

Installation

The installation of the BlueBridge Designer software is simple and quick. The first step is to extract the files to a common folder and open setup.exe.

(This is an example of a typical Windows setup. Working with a MAC is very similar)

Windows will ask you if you would like to install. Click 'Install' to continue.

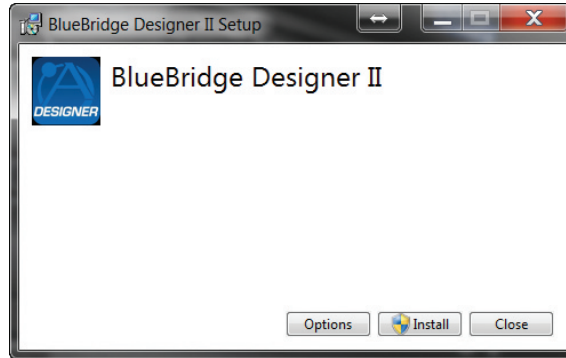


Fig 3

Allow the program to complete the installation process. This may take a several minutes depending on your system.

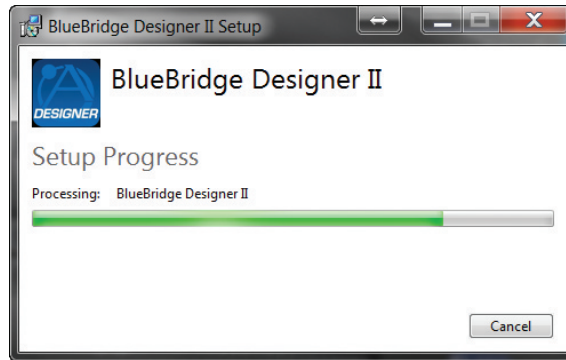


Fig 4

When complete, windows will ask you for permission to allow firewall access. The suggested setting is to allow BlueBridge Designer to communicate in Private networks, such as home or work. Allow access to public networks at your own discretion. Check the appropriate boxes, then click 'Allow Access' to finish.

Installation

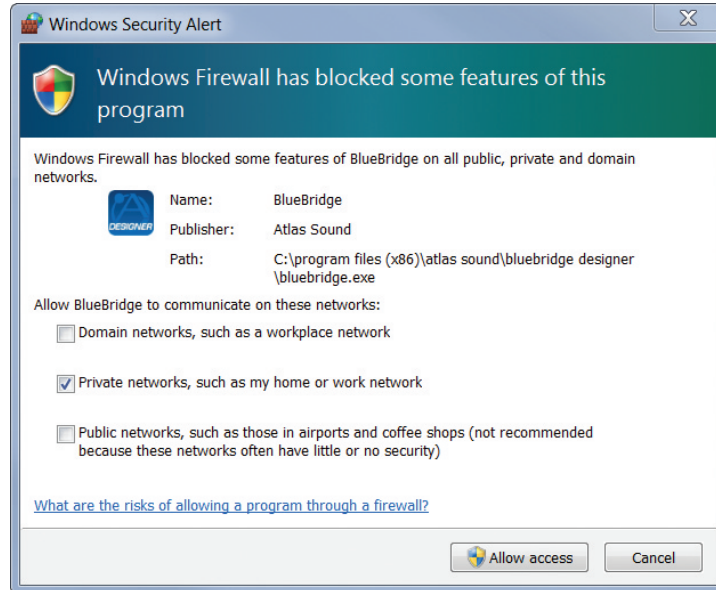


Fig 5

The BlueBridge Designer software is now installed.

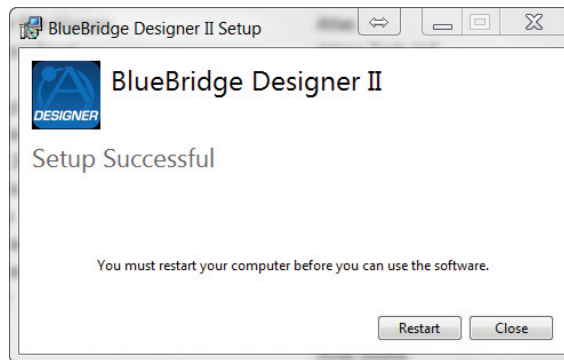


Fig 6

Installation Notes

The Microsoft installation program / process remembers what location you installed from the first time you load the BlueBridge Designer software into your computer. This can cause issues if you try and load a new software version (update) from a different location than the location originally used to load the BlueBridge Designer software into your computer (USB, Internet Download, etc).

Solution: Simply un-install the old BlueBridge Designer software version in Control Panel before you update your software version each time. You won't have any update issues and you won't have to remember what location you loaded the software from previously or what the source (USB, Internet, etc).

- Make sure that the software version you are installing is the latest version available as indicated on the web site.
- If you have a personal Firewall setup on your computer, a Firewall popup window might be displayed during the software installation to ask whether users want to "Block" or "Allow" BlueBridge Designer from accessing the network. Select "Allow" to continue installation.
- Once installed and working, close the BlueBridge Designer software for now until you are instructed to open it again.

Connecting to the Network

- Connect the device to the network using a standard Cat5/6 Ethernet cable.
- Ensure that DHCP is enabled in your computer's network settings.
- Access the BlueBridge Designer software and choose "Network View" to locate the hardware connected to the network.

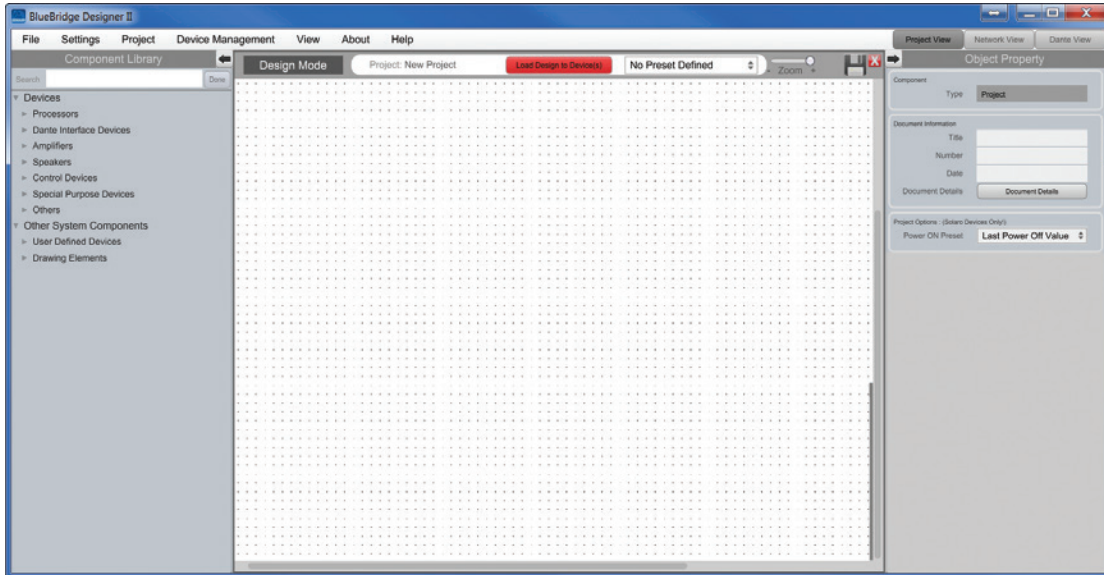


Fig 7

After clicking "Network View," a page will open that shows all hardware units that are connected to the network as shown below.

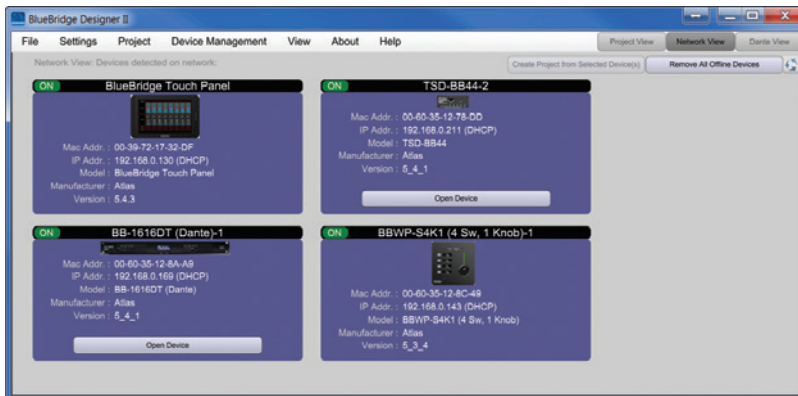


Fig 8

In the Network View, the device can be identified by IP address, MAC address, model, or Firmware Version as shown in Figure 8. The window will show the status bar and then the device will appear and indicate the upload progress. **Note:** It is possible for it to take few minutes to detect the device. If it does not detect the device, reset (cycle) the power to the device by turning the unit off and waiting 30 seconds before powering it back on. The upload progress is only shown when the device is initially powered up.

Connecting to the Network

Note: If you have used this software with any hardware devices that was previously connected, you may still see them appear in the Network view as shown in Figure 9. These can be identified by the model number. The RED dot in the upper left corner of the device window indicates the device is no longer detected. - You can remove the unused hardware device by right clicking on the device you want to remove and select "Remove Device From Console" or selecting the "Remove All Offline Hardware button as shown in Figure 9.

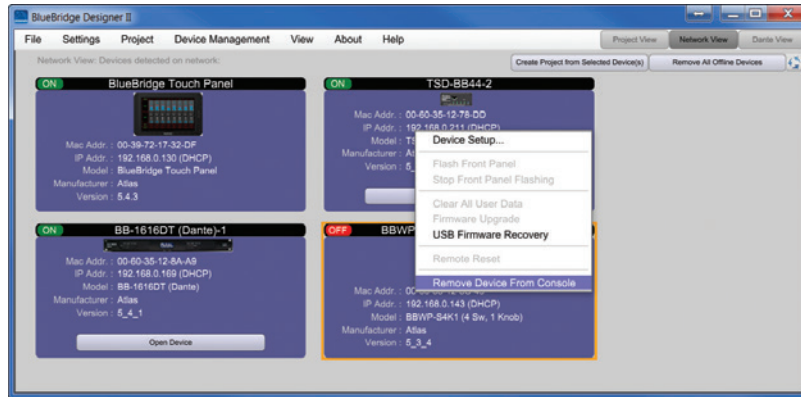


Fig 9

Once the hardware device is detected on the network and the status indicator is Green, return to the Project View so the device can be "Mapped" to the design file as shown in Figure 10.

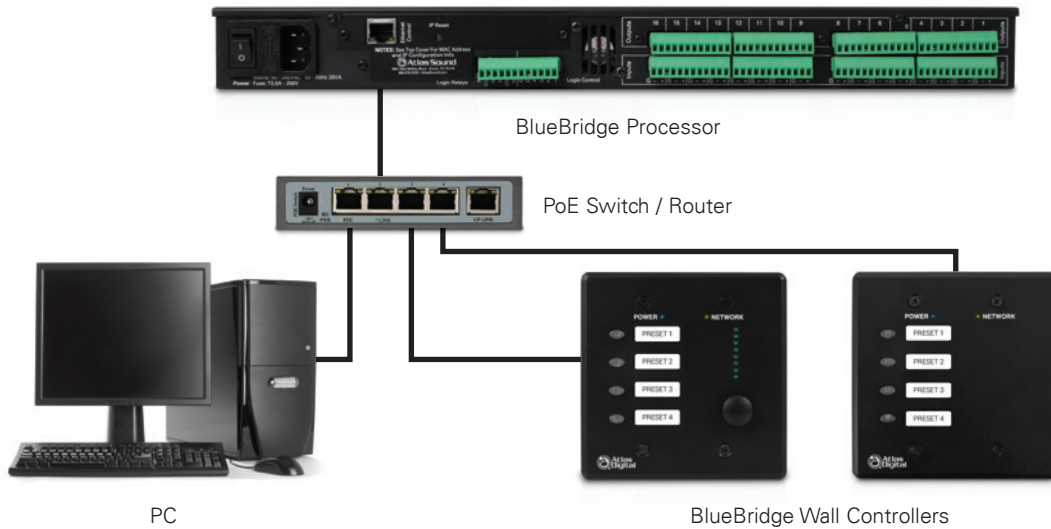
Initial Device Connectivity

The BlueBridge digital processors run on a network based infrastructure and are set up and controlled by a host computer via Ethernet using the BlueBridge Designer software.

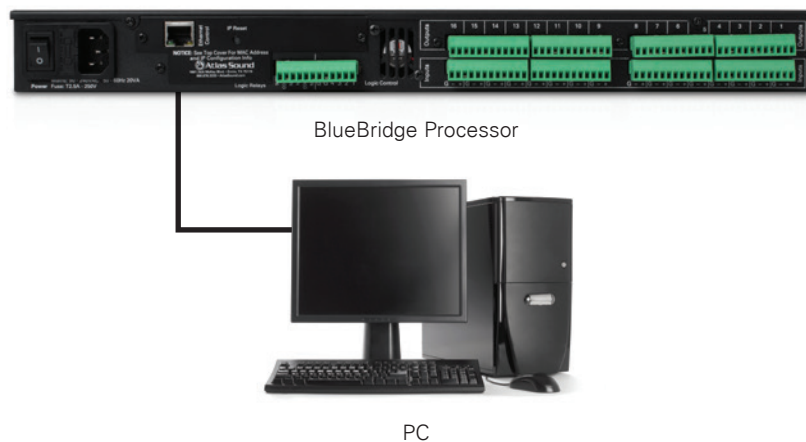
A network connection can be made between the computer and BlueBridge DSP one of two ways:

- (A) Via a DHCP enabled Router (or a DHCP enabled Server / Switch combination)
- (B) Directly using an Ethernet cable (or indirectly via an Ethernet switch)

The primary difference between these two connection methods is the automatic IP address assignment that DHCP provides. In configuration A, an IP address is automatically assigned. In configuration B, a static IP address needs to be assigned.



Configuration A



Configuration B

Initial Device Connectivity

All wired connections utilize a standard RJ45 Ethernet connection. The host PC and BlueBridge Control PC can also be connected via a WiFi connection.



Fig 11 - Standard RJ45 Ethernet Connector

(A) DHCP Enabled Router or Server / Switch Combo Connection

The BlueBridge processor device boots up with DHCP enabled by default. With DHCP enabled routers and servers BlueBridge Hardware will automatically obtain an IP address upon connection and power up. This may take a minute or two as the processor will look for a DHCP router or server to obtain its IP address – as does your computer.

This is by far the recommended connection method whenever there is no specific need or reason to assign IP addresses manually. Since the AtlasIED wall controllers will often be used to remotely control the processor and they need to be connected to a router – and better still a POE router that also supplies power over the Ethernet cable to each wall controller – the standard network connection of the processor, a DHCP enabled POE router and your PC will provide DHCP enabled automatic IP address assignment quickly and reliably (and accommodate the BlueBridge Controllers).

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

Refer to Manual Assignment of IP Addresses to learn more about how to configure the correct IP addresses for your devices.

(B) Direct (Static) Connection

When the processor is connected directly to a computer (or indirectly via a switch or hub) DHCP is not available to assign IP addresses so the connection process is not quite as automatic. But, once no DHCP is detected – the BlueBridge processor device will revert to its default IP address of 169.254.128.128 and the BlueBridge Designer software will then automatically connect with the device as long as Windows/Mac sets a similar autoconfig IP. As long as all devices are in the same subnet, ie 169.254.128.XXX where XXX is a unique number between 1-254 for each device connected, there should be communication between devices.

Note: Most modern computers can now detect a direct connection so you can use a straight through Ethernet cable for the direct connection (if there is a direct connection issue that persists then you might try a crossover type Ethernet cable).

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

Initial Device Connectivity

With your processor/s (and devices) connected as a network or directly to your computer, power on all devices.

- On power up the processors blue Power Status LED will light.
- If the processor has an Ethernet cable / network cable connected the orange Network Status LED on the front of the processor will light- once the processor initializes. If there is no Ethernet / network cable attached it will remain off.



Note: This does not mean that you have established a Network Connection, only that an Ethernet or network cable is connected to the processor. Proper Network Connection and Operation is indicated/displayed only in the software's Network View page.

- Upon being powered up the processor will search for a DHCP server to obtain an IP address. If it locates a DHCP server, it will connect quickly. If not, the processor will revert to its default IP address (169.254.128.128). This may take a minute or so to accomplish.
- When the processor and software are connected and commands are being sent to the device the orange Network status light will flash.

Launch the BlueBridge Designer Software

Upon opening the BlueBridge Designer software you will be shown the StartUp window.

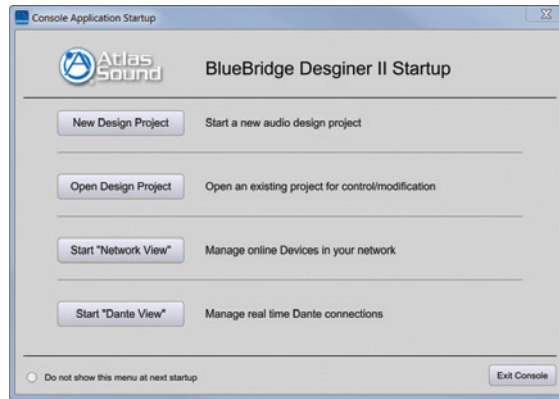


Fig 13

It provides 4 possible selections, New Design Project, Open Design Project, and Start Network View & Start Dante View. (Network & Dante View will also be available to you as a separate button located at the top right of the main Project Design window once you are working on a DSP project).

Network View

Click Start Network View from the BlueBridge Designer Start Up window. The Network View displays all BlueBridge DSP hardware and control devices connected to the network, and information such as the processor device model, a green, yellow or red network connection indicator, the IP address, and the firmware version.

In Network View you should now see your processor device model connected to the router block and the Network Connection Indicator to the left of the processor device model should be Green (meaning it is connected and operational).- If your processor and software haven't connected properly, you will see a Yellow or Red connection indicator to the left of the processor device model indicating a connection or operational problem.

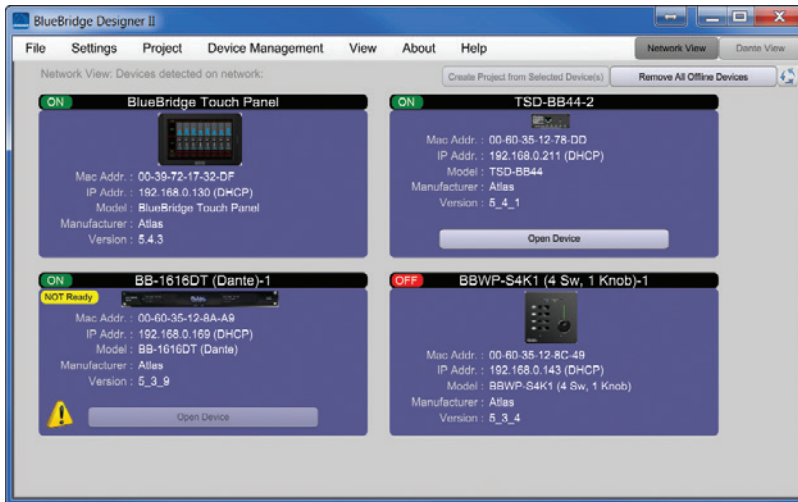


Fig 14

Green – Network connected and operational.

Yellow – Connected/Online but Not operational. Hovering over the “light” will display a pop up with why it is in this mode.

Red – The processor is offline, not connected or no communication between the BlueBridge Designer software and the processor. This could be a temporary Offline interruption if the processor is busy performing a firmware upgrade or the processor is re-booting. Please check device cables, connections and power.

At times you may just see an exclamation mark (!) – This usually simply indicates that a firmware upgrade is available. This normally won't be an issue unless there are updated modules in the project file that the outdated firmware doesn't support.

Connection Problems

Yellow Network Connection Indicator

While in Network View if there is a Yellow network connection indicator next to the processor device model the device is connected/online – but Not Ready / Not Operational. There are a number of network problems that can create the Network Connection Indicator to be Yellow, so to assist in identifying the problem, when the indicator is Yellow you can hover your cursor over the device and there is a pop-up tooltip message to tell you the kind of issues it has detected.

Some probable causes include:

When you are not connected to a DHCP enabled router or server the processor will detect this and revert to its autoconfigured IP Address (169.254.128.128). If you see that default IP address shown in Network View, you know its default IP address is in effect. If connected to a DHCP enabled router, Reboot the router, then restart the BlueBridge hardware & finally close down BlueBridge Designer and open it again. This will usually resolve the issue. If so, the network connection indicator to the left of the processor device model in Network View should now be Green, indicating that the processor and software are now connected and operational.

If after the software re-boot above the connection indicator is still Yellow (connected but Not Ready/Operational), it is possible that the processor has retained a previously assigned IP address and is holding onto it and not allowing the processor to revert to its default IP address.

To resolve this potential issue the processors network settings and password need to be reset.

IP Reset Push Button / Reset Processor Network Settings and Password

Close down the BlueBridge Designer software and Power down the processor device.

At the rear of the processor you will see a small round recessed push button labeled “IP Reset” just to the right of the Ethernet connector. Push this reset push button inward using the point of a pen or a small pointed object.

Press the IP Reset push button inward and while holding it pushed in power up the processor device.

Wait 5-10 seconds after power up until the “Network” light begins to blink, then release the IP Reset push button.

All I/O lights should then begin to flash.

Wait for the processor to power up completely (this will take a minute or so 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 processor and software communicate with each other) you should now see the Green network connection indicator to the left of the processor device model indicating that all is now connected and operational. If you notice the default IP address of 169.254.128.128 is still shown, you’re either using an incorrectly configured Static IP setup, or the DHCP server still isn’t available to the device.

Note: Early BlueBridge processors were manufactured with a different IP Reset switch that was hidden behind a removable cover on the rear of the processor. If so, follow the instructions below to reset the processors IP network settings and password.

Remove the small black cover on the rear of the processor near the Ethernet connector (remove 2 small screws). Looking from the back of the processor you will see a 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 processor.

The balance of the process is as above.



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Additional Probable Causes

Device Design File (Schematic) Not Ready:

If the Popup Tooltip message shown when you hover over the device in Network View says Device Schematic Not ready, then the processor has already been loaded with a design file. Give the connection process a minute to connect and if it does not connect close the BlueBridge Designer software, open it again, select Start Network View and you should now see that the processor is connected and operational – as indicated by the Green network connection indicator to the left of the processor device model.

DSP Processing Error:

If the Popup Tooltip message shown when you hover over the device in Network View says DSP Processing Error, this could be a bad or corrupted Design File. You may need to reload the design file and restart and/or restart the device to reset its DSP chip.

Device NOT READY:

Restart device. Reboot software.

Error in Firmware Upgrade:

It will print out an error code when you hover your cursor over the device in Network View Just retry doing the Firmware Upgrade again.

Device can communicate to BlueBridge Designer with UDP but cannot communicate with TCP:

It's a network setup issue, usually related to either a PC's firewall, or Router setting not passing TCP traffic.



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Manual Assignment of IP Addresses

There are applications that require or prefer that the IP addresses be manually assigned (the same solution may apply to some connection issues). To manually assign IP addresses.- In Network View as shown below – right click the processor device and select Device Setup.

In the Network Properties window as shown at the right – select “Change Network Configuration” in order to disable DHCP and to insert IP addresses manually (it also provides two built in test procedures, device security, and device information).

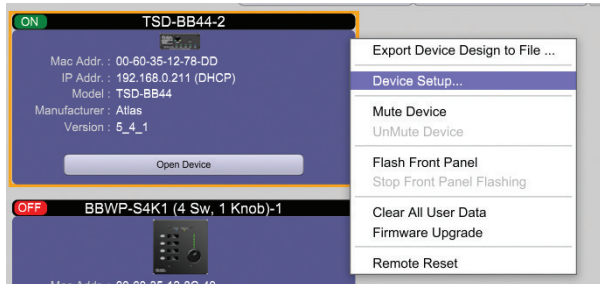


Fig 15

The system config page will be displayed. Click on the “Network” tab, and fill out as needed for your installation.

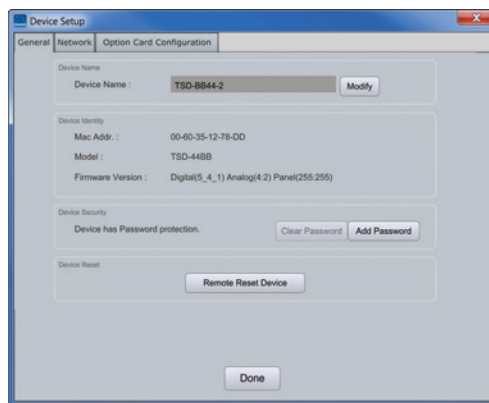


Fig 16

When finished, Select “Apply” to save changes and then “Done” to exit.

Determining Network Information

In this section, we will be navigating through Microsoft Windows to determine your home networking information for the use of programming your BlueBridge device.

The first step is to open the 'Start Menu' and select 'Run...'

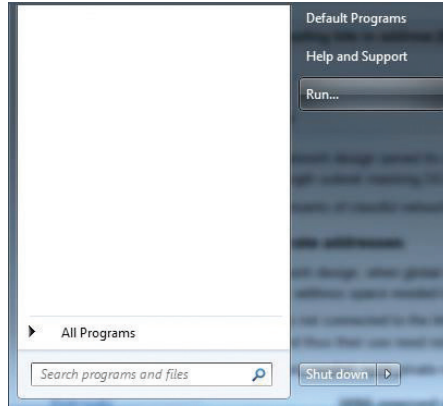


Fig 17

In the newly opened 'Run' window, type 'cmd' into the 'Open' box. Hit enter or click 'OK'.

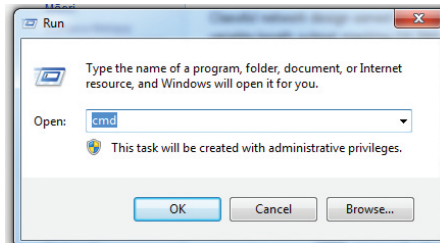


Fig 18

You have now opened the command prompt, where we can display the TCP/IP Network Configuration information. Type 'ipconfig/all' (No Quotes) and hit enter.

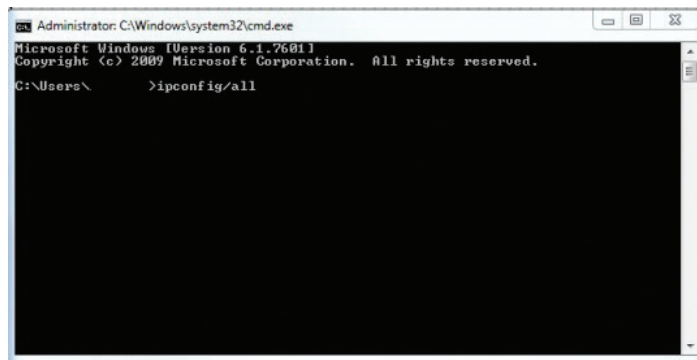


Fig 19

From this list of values, you can now locate your network's 'Default Gateway', 'IP (IPv4) Address' and 'Subnet Mask' values.

```
IPv4 Address . . . . . : 192.168.0.19(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Monday, May 14, 2012 9:14:15 AM
Lease Expires . . . . . : Thursday, May 12, 2022 9:14:15 AM
Default Gateway . . . . . : 192.168.0.1
DHCP Server . . . . . : 192.168.0.1
```

Fig 20

To determine an IP Address for your BlueBridge Hardware, utilize the first 3 values (Octets – In our example 192.168.0) of the 'IPv4 Address' and select the desired value for the fourth Octet (In our case, 19). Ensure that the value you choose is unique to any other system on your network, so we could set ours to 192.168.0.20 – Again the 192.168.0.XXX must be unique to each device! Reference the IP address (IPV4) of your PC in the TCP/IP Network Configuration menu for an example of how the IP address should be structured.

Mapping the Device

New hardware modules need to be mapped to their physical counterpart. Unmapped devices will appear translucent. In the image below, notice that the grid is visible underneath the red BlueBridge DSP module.

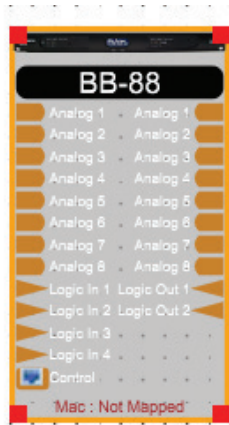


Fig 21

Right Click the Hardware module to "Map Physical Device" and follow the steps shown in Figures 22 and 23. Select "Map Physical Device". **Note:** Once the unit is "Mapped" the DSP Hardware block for the unit will no longer be shaded as shown in Figure 24.

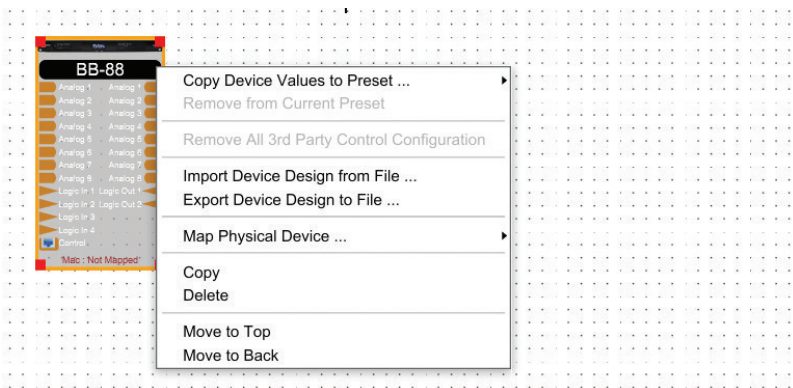


Fig 22

Click the box of the device that will be linked to this design file.

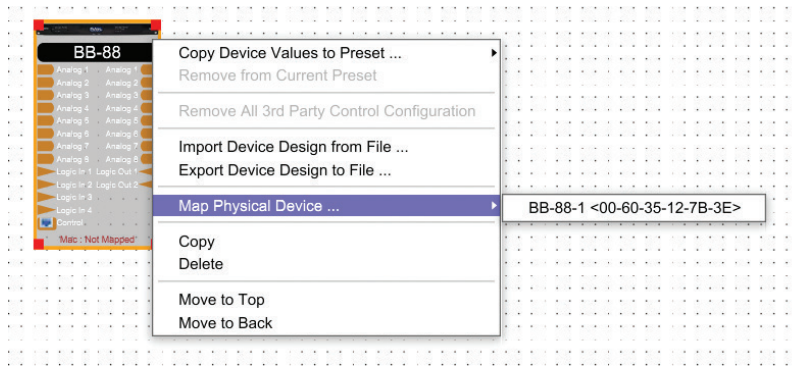


Fig 23

Note: There may be more than one unit listed, use the MAC address for identification.

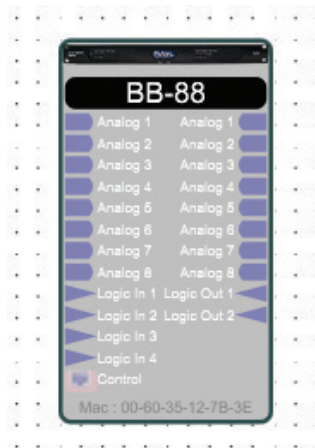


Fig 24 - Unit is Mapped

Configuring the Unit Online

When in Online Mode, the Hardware Devices and the Design File are communicating, all adjustments are live and in real time. Click the button "Switch to Online Mode" to go from Design Mode (Functional Wiring Diagram) to Online (Live) mode, in the menu bar as shown in Figure 25.

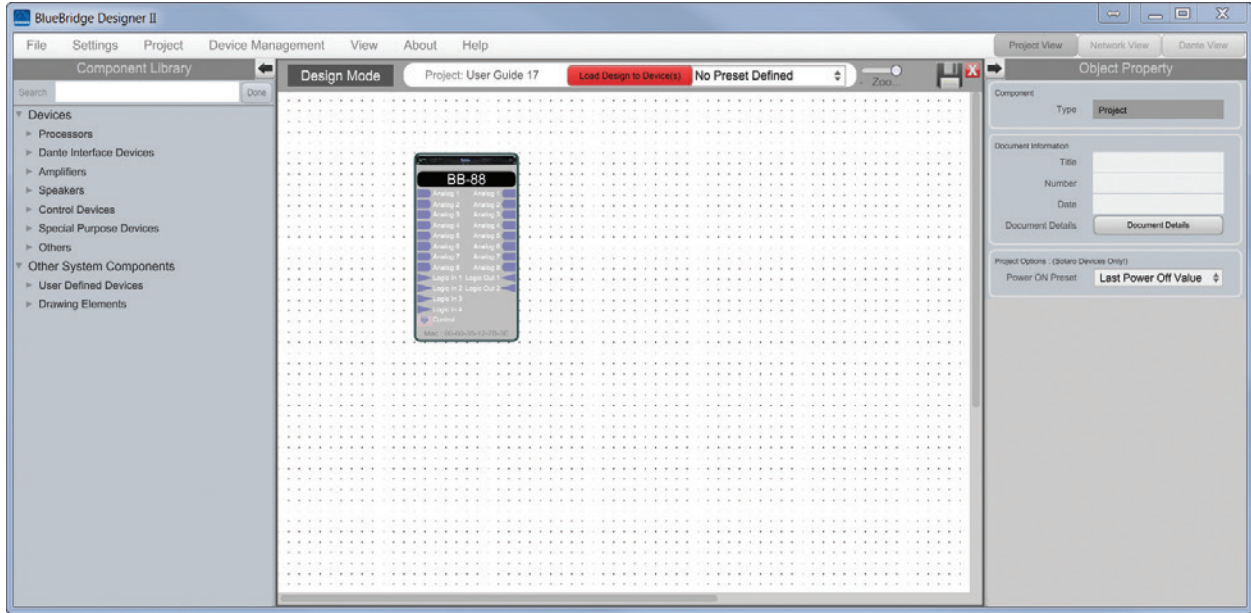


Fig 25

The software will generate new information windows. Click the OK to save, then OK in the second dialog to overwrite current settings, or "No" to go online & maintain the devices current settings. This can be advantageous when changes have been made from the network view & the project file needs updating. This is shown in Figures 26 and 27.

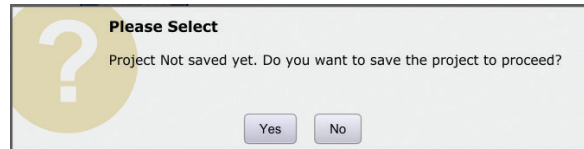


Fig 26



Fig 27

The Design file will now upload the file into the Processor hardware as shown in Figure 28. The wait time will depend on the size of the design file and can take several minutes to finish.

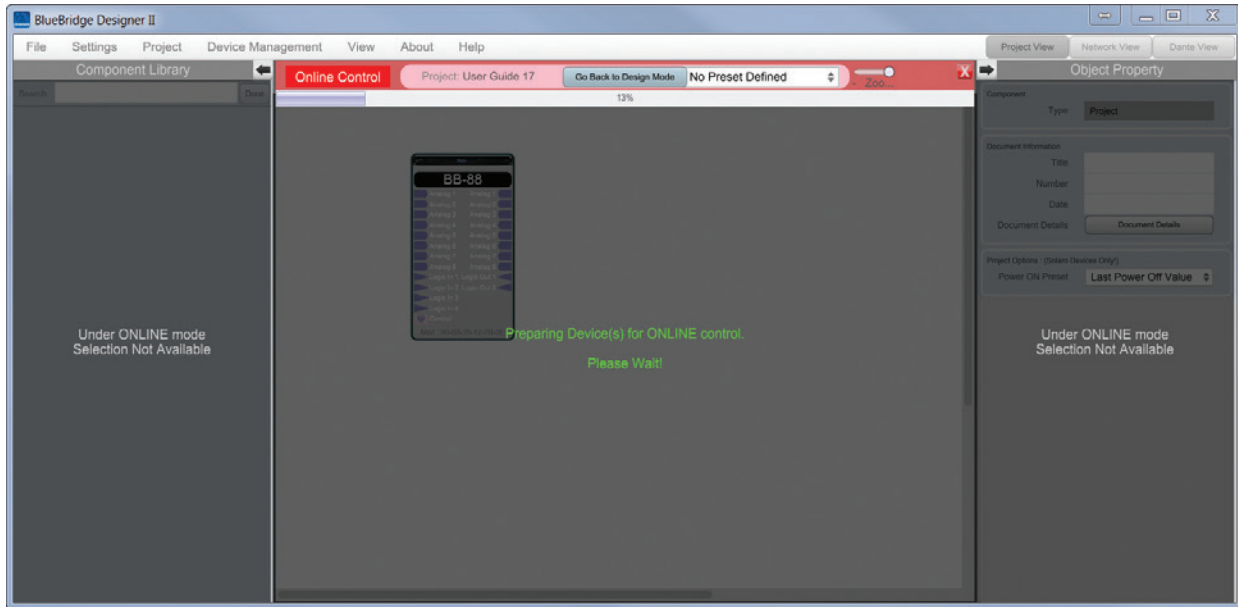


Fig 28

The Processor is now Online (Live) and ready to be controlled. **Note:** The grid is gone and the background is solid as shown in the image below. This is a good visual tool to indicate the Processor is Online.

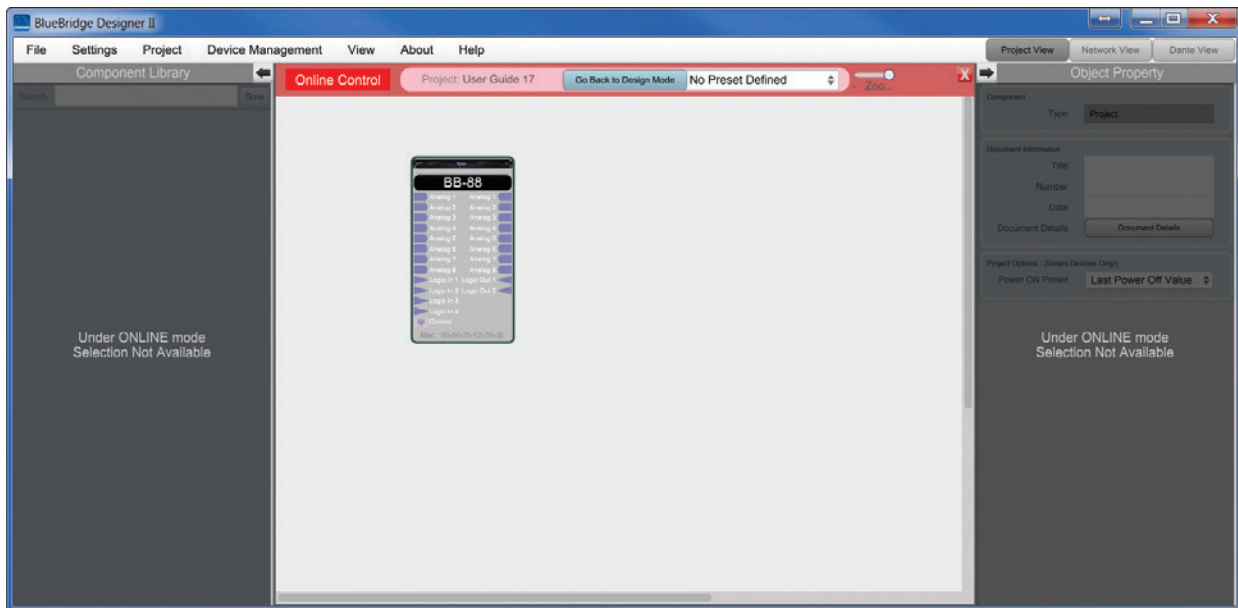


Fig 29

To see how the DSP Hardware Device is internally configured, double click on the Processor Hardware device. The internal configuration of the DSP design file will appear as shown below.

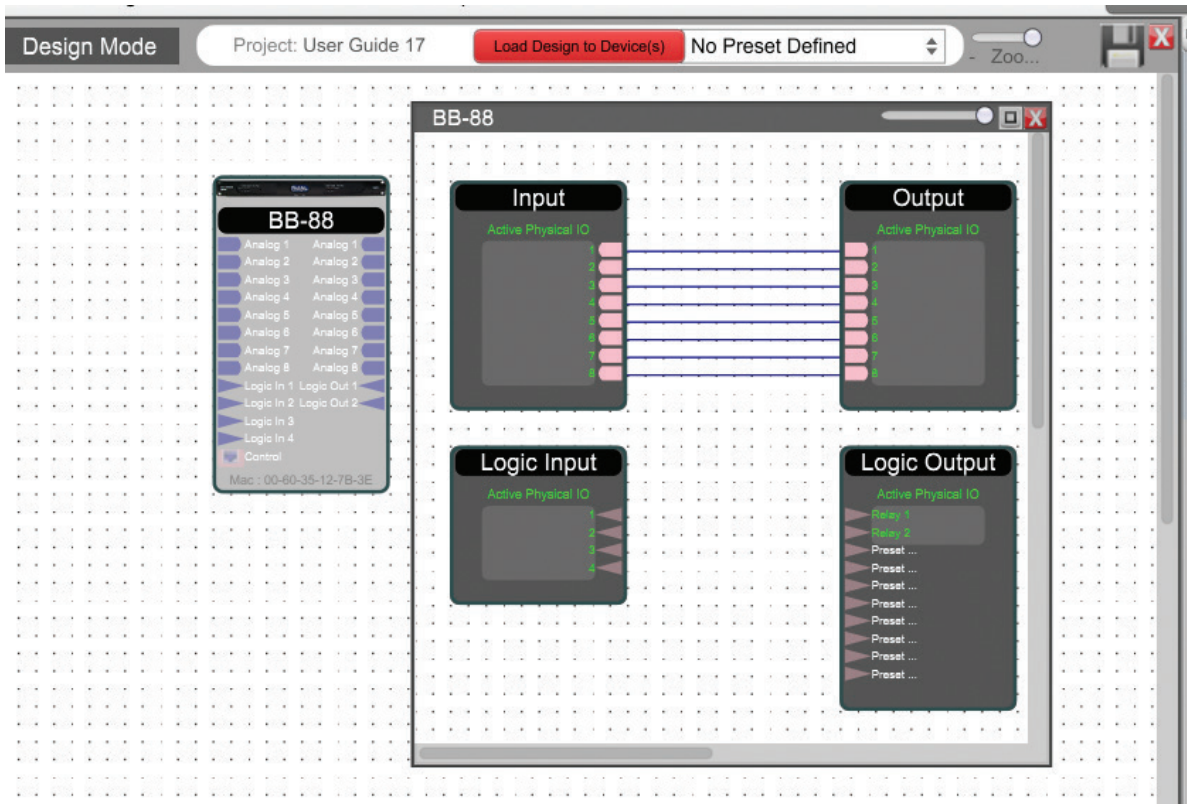


Fig 30

Looking Inside the Device

Once the DSP Hardware Device is open, the design file can be accessed as shown in Figure 31. The example below shows a BB-88 Design Test file where the input block is wired to the output block. Note: Further on, there will examples of designs with DSP Modules applied to the Design file.

Double clicking on the DSP Hardware Input Block will launch the first stage of gain control as shown in Figure 32. **Note:** The Example is in Online Mode.

AtlasIED DSPs are unique in that the first window allows control of the Digital Trim and access to the Analog Mic / Line Pre-Amp setup block as shown in Figure 32.

Note: It is always important to select and set the gain structure in the Analog domain first. Digital Trim is POST (after) the Analog gain setting.



Fig 31

Double Click the input to access the DSP Hardware Input Block:

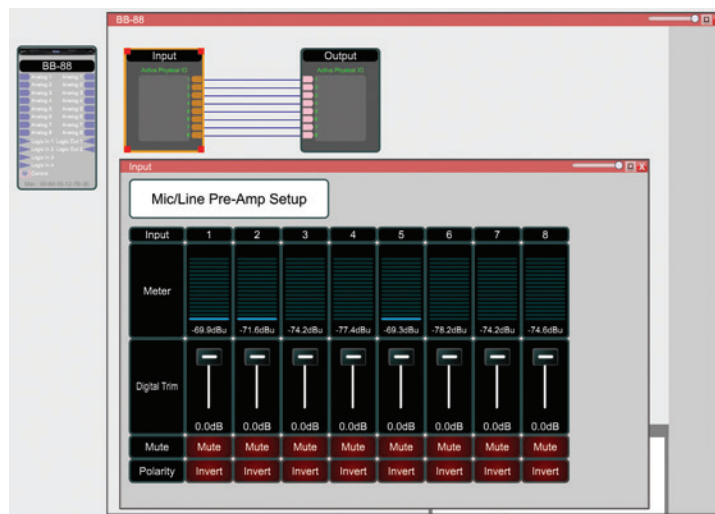


Fig 32

Clicking the Mic / Line Pre-Amp Setup will launch a second window as shown in Figure 33. In this window you select Mic or Line Level, Phantom Power and fine adjustment of the Analog Mic / Line trim levels.

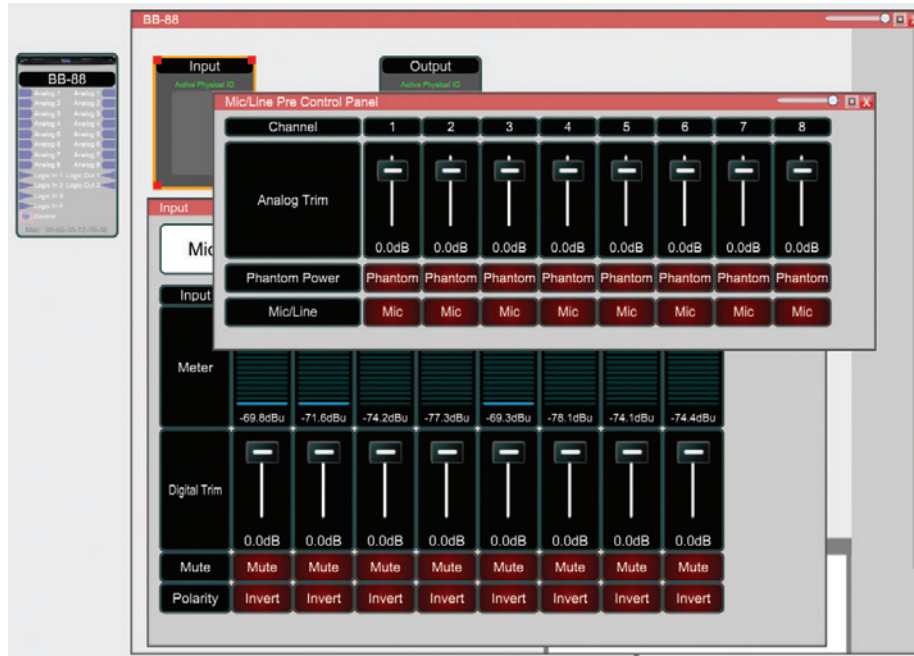


Fig 33

Double clicking the DSP Hardware Output Block opens an Output window as in Figure 34. The DSP Output Block window has Gain Control, Meters, Mute and Polarity.

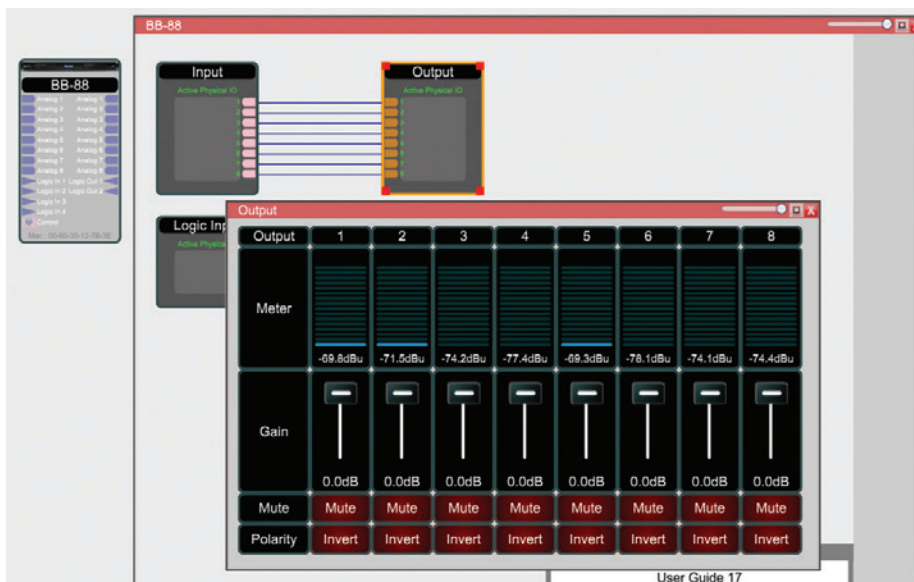


Fig 34

Firmware Revision Check

After finishing this instruction guide, we strongly recommend that you check for the latest software and firmware versions. This is very important, as these updates may contain critical bug fixes and new features. In Figure 35, you will see where to find the Firmware revision. This is taken from the Network View. The Network View shows all AtlasIED BlueBridge Hardware connected to the network. The firmware version is displayed in this window.

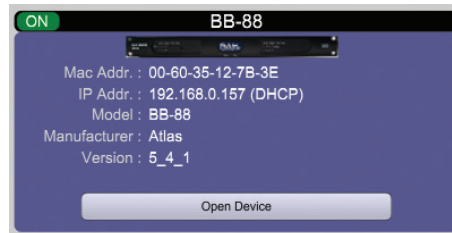


Fig 35

Click on the "About" tab in order to access the Software release number. A software revision window will appear.

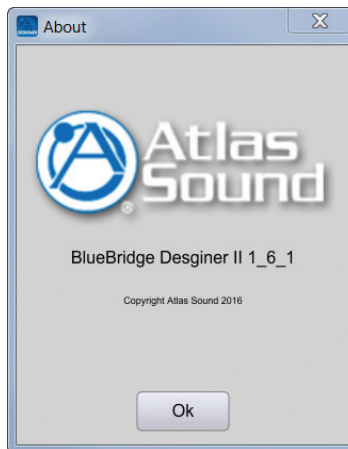


Fig 36

Design Example

The Design shown in Figure 37 is the Atlas HS Stadium System Design Template to be used with a BB-88 processor, a BBWP-TOUCH7 and BBWP-S4K1 controllers. The project contains 2 Mic inputs, Music Player Inputs, 2 Wireless Microphone Systems and 1 Bluetooth Audio Receiver. The output of the BB-88 is feeding two HPA amplifiers powering twelve FS Arena Horns, a PA60G amplifier powering a pair of SM82T speakers for the concession areas and two SM42T speakers with associated AT-10 volume controls in the two ticket booths.

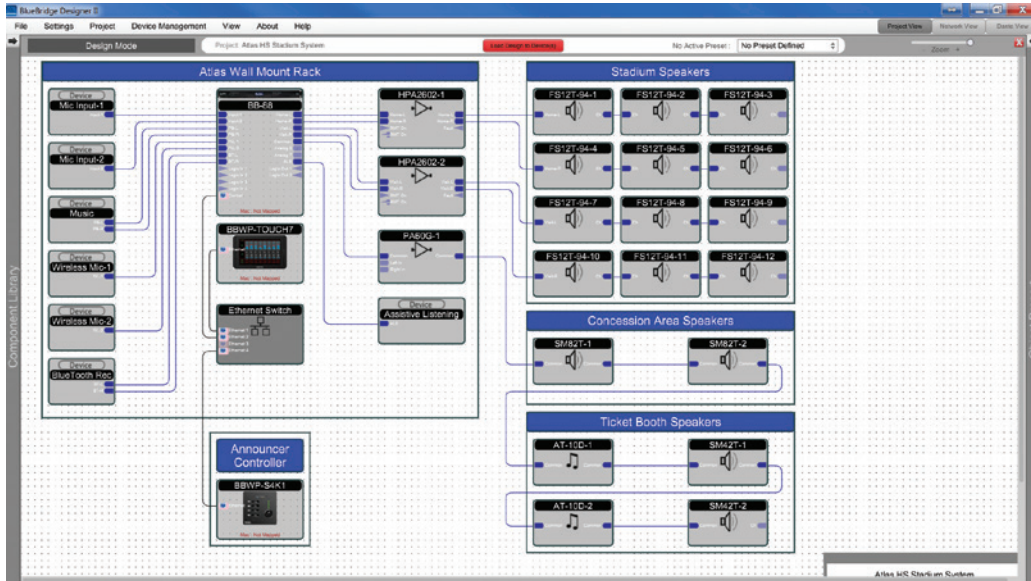


Fig 37

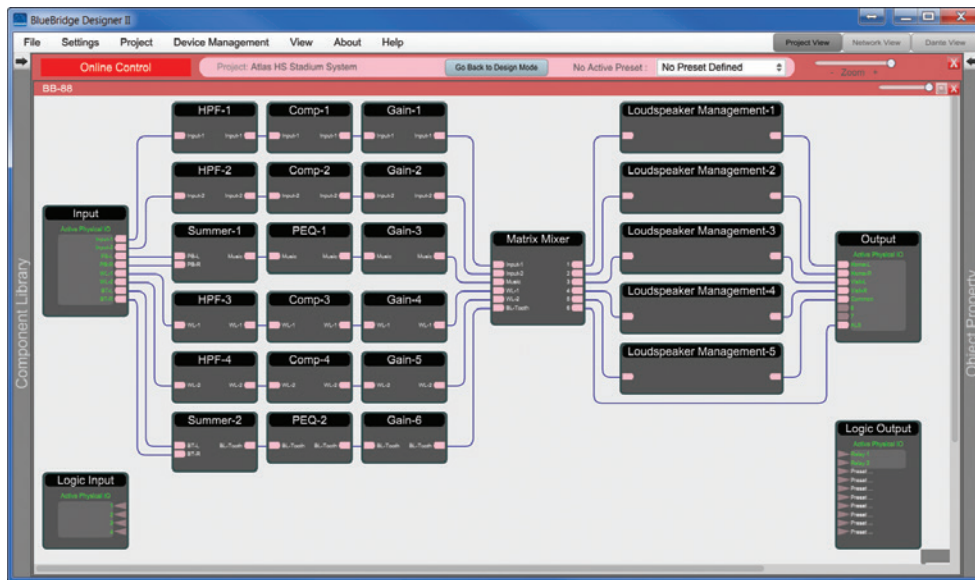


Fig 38

Selecting a processing Block inside the design, and clicking it open, is fast and intuitive when needing to make fine adjustments to the system.

Figures 39 and 40 are examples of the Compressor and Parametric Equalizer Processing Blocks opened in this systems design. The BBWP-Touch7 or BlueBridge Control can be setup in almost unlimited configurations and with multiple optionally password protected pages. On this system shown in Figure 41, there is a complete set of meters for output monitoring and zone muting, Input level control and input mute control.

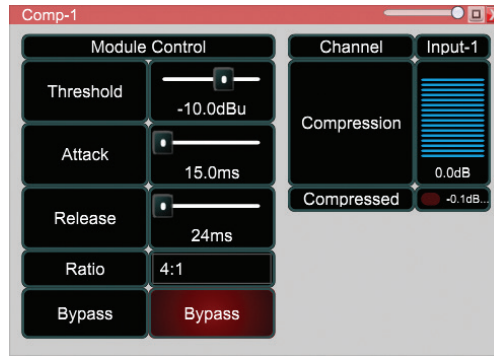


Fig 39

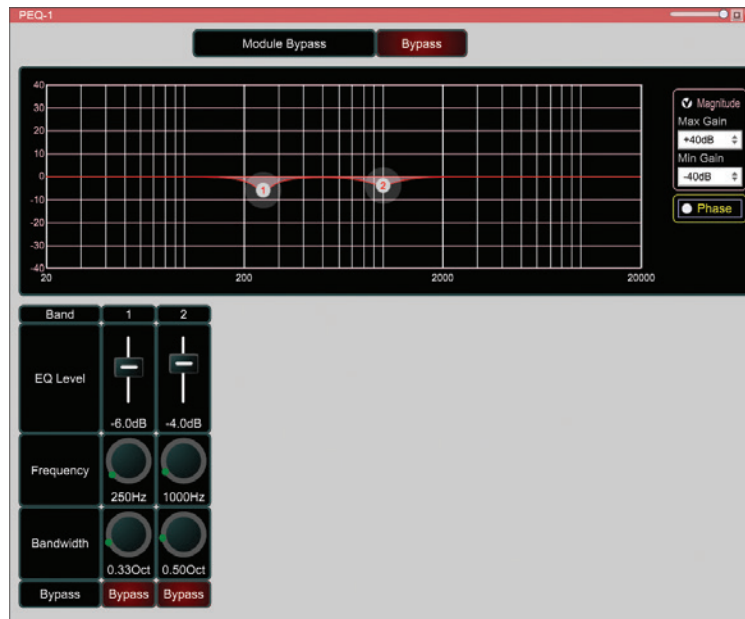


Fig 40



Fig 41

Matching the Firmware

The AtlasIED BlueBridge family of products contains various types of devices. To assist you in determining which firmware file is appropriate for your device, refer to the chart below.

Note: The file structure may be different from the date that this list was created. Always check www.AtlasIED.com to keep updated.

#_#_# represents the 3 digit version code of the firmware update.

(BLUE BRIDGE_#_#_#.img)- BB-88, BB-168, BB-816, BB-1616, BB-88DT, BB-168DT, BB-816DT, BB-1616DT

(ATLAS-TSD_#_#_#.img) – TSD-BB44, TSD-BB22

(BB-AEC_#_#_#.img) – BB-168AECDT

(BBWP_#_#_#.img) – BBWP-K1, BBWP-K4, BBWP-S4, BBWP-SW8, BBWP-S4K1

(BB-EB1616-DT_#_#_#.img) – BB-EB1616DT

(BlueBridge PanelTouch_#_#_#.zip) – BBWP-TOUCH7

(BB_SM1_#_#_#.zip) – BB-SM1

Step by Step Guide

The hardware device must be connected and functional before upgrading the firmware. We suggest you follow your hardware's Quick Start Guide to get an understanding on how to connect a device to you PC. The guide can be found under the specific product's section on the AtlasIED website. Section 1.2 (Network) of this help file will also prove quite useful in helping you connect and troubleshoot any problems you encounter.

Open the BlueBridge Designer software.

Make sure that the PC is connected to the network (or directly to the device).

If you are not completely sure of your device or network's IP addressing, please set your computer's IP address to Automatic (DHCP).

Note: Using an older version of software with a newer firmware or newer software with an older firmware will work but some of the features may not be available and bugs could exist.



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BlueBridge Designer Network

In this example, select the "Start Network View" choice, as shown in Figure 42. Alternatively, click the "Network View" button if you are currently in design mode. (Figure 43).

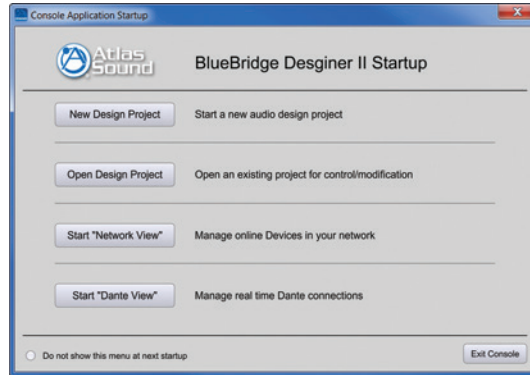


Fig 42

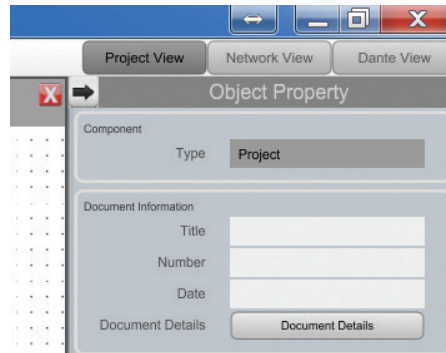


Fig 43

Figure 44 shows some of the devices connected on the network.



Fig 44

In the network view, all the units on the network will be displayed. You can see the status of the device by the Network Status Indicator color.

Green - The unit is On Line and Operational, meaning the device is connected and communicating to BlueBridge Designer software.

Yellow - The unit is On Line but has no file loaded onto it to communicate to the BlueBridge Designer software.

Red - The unit is NOT connected to the Network or to the BlueBridge Designer

Firmware Version

You will be able to see the name of the unit model or the given name, IP address, MAC address, model number, and the version of the firmware currently running on the unit. Compare the version number to the latest version you found on the web. If the version number on the web is higher than what is shown on the device you are connected to, the software will let you know the firmware is not up to date by putting a mark on the unit as shown in Figure 45.



Fig 45

Before upgrading your device you must save any design files from the device onto your computer. All files on the device will be erased during the upgrade process. After the upgrade is completed the default Unity File will be automatically reloaded into the device and the device will go back Online. You can now reload the design file back onto the device.

Upgrade Procedure

To update the Firmware go into the Network View & right click the device that you would like to update. A box pops up. Select "Firmware Upgrade" as shown in Figure 46.

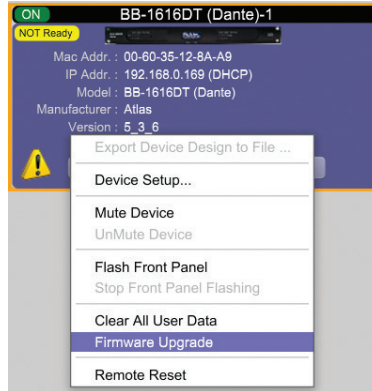


Fig 46

An information window will pop up asking if certain you wish to proceed. Select "OK" as seen in Figure 47 only if you're OK with wiping ALL data in the device. A project file WILL have to be reloaded.

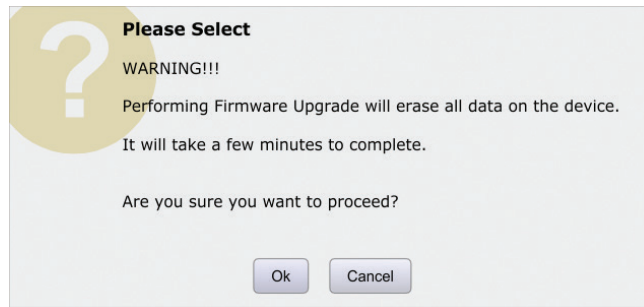


Fig 47

Figure 48 below shows a window to select the Firmware file. In this example, we are updating a TSD-BB22, so the correct file for this device is ATLAS-TSD_5_4_1.img. Highlight the correct file and select “Open”:

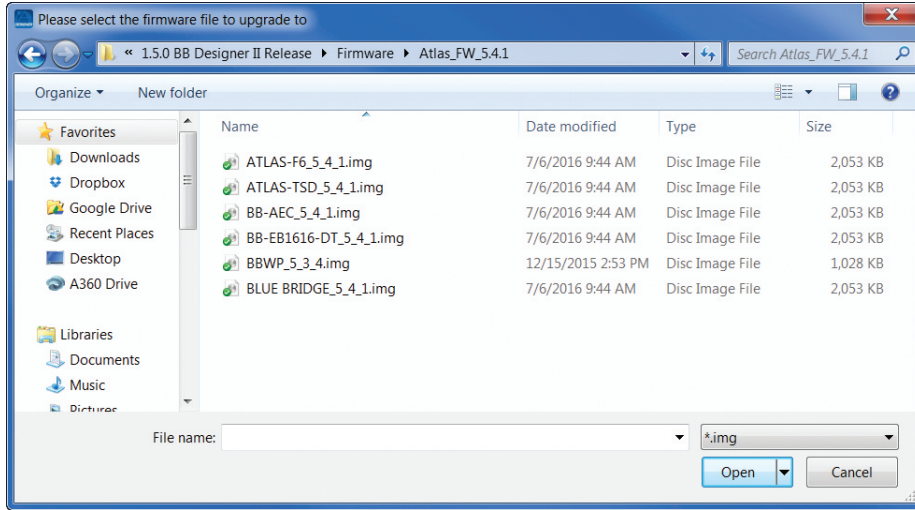


Fig 48

A bar in the device window will monitor the Firmware upgrade progress. Figure 49 shows the upgrading procedure and upon completion BlueBridge Designer will read the firmware data as a check (Figure 50). When the Firmware has been uploaded to the device, the device will perform a re-boot and update internal data.

During this period (around 2-3 min) the device status indicator will turn “RED” and appear OFFLINE, as the device is performing self-initialization.

DO NOT power off the device during this period

When the device is initialized, it will communicate back to the BlueBridge Designer software and the status indicator will become “Yellow.” The status indicator is Yellow because the device does not have a Design File loaded to it yet.

Note: Powering off your device during a firmware upgrade can result in a complete corruption of the processor. If this happens, please contact technical support at support@AtlasIED.com so we can yell at you.



Fig 49



Fig 50

The DSP hardware will automatically go back Online with the factory default file loaded on it.

Note: If you have more than one unit that needs the Firmware to be upgraded you can save time by updating them all at the same time. This can be done as long as they are the same Network and appear in the Network View page.

Figure 51 shows that the status of the device is now Green and ready for use but does not contain a design file yet. Figure 52 shows the same unit after a design file has been loaded.



Fig 51



Fig 52

Create a System Preset

Module parameters can be saved into one of 70 preset slots for a design file. Presets can only be created in design mode and can be saved at three different tiers: Device, Module, and Parameter. Open a module and select any parameters that you wish to be added to a preset. Right click and select "Save Parameter Value to Preset".

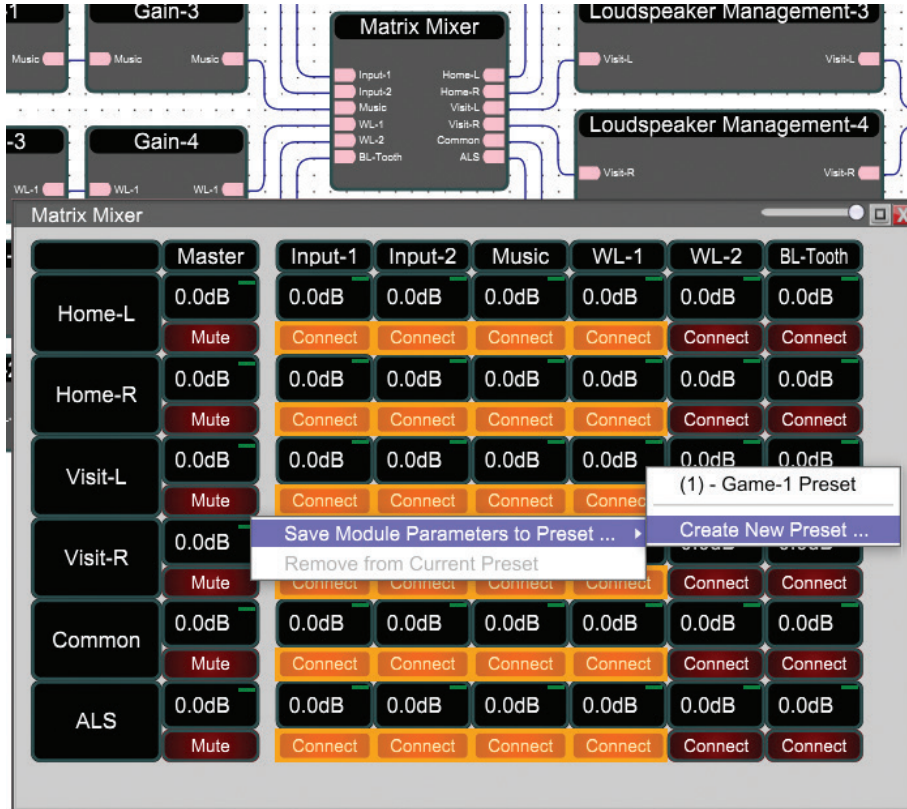


Fig 53

Select a preset to add these parameters to, or if no presets exist, click "Create New Preset" and type in a name for the new preset. Right click a module to save all settings in that module to a preset. Similarly right click a device and save all parameters in all modules in that device as a preset. Presets can contain parameters from multiple devices.

Load a Preset

To recall and view the presets created in your project, click the 'Select Preset' button located at the top-right of the schematic window. This will open up a window containing a list which displays all of your presets. The image below displays the 'Select Preset Panel' as described above. In order to load a preset that you have already created, simply click on the appropriate preset.

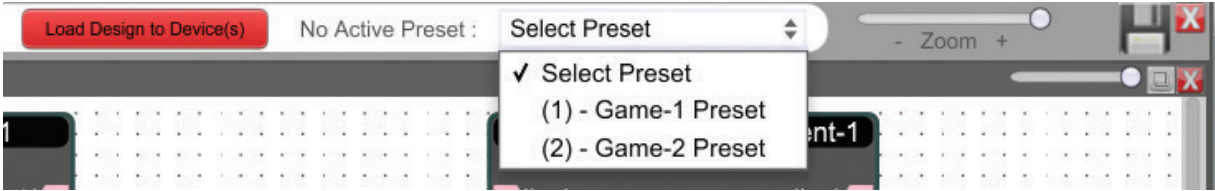


Fig 54

After applying the preset, any Device, Module, and Parameters altered by preset will be outlined in Red (in design mode only). Shown below is a preset for matrix connection points.

Matrix Mixer		Master	Input-1	Input-2	Music	WL-1	WL-2	BL-Tooth
Home-L	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB
	Mute	Connect	Connect	Connect	Connect	Connect	Connect	Connect
Home-R	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB
	Mute	Connect	Connect	Connect	Connect	Connect	Connect	Connect
Visit-L	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB
	Mute	Connect	Connect	Connect	Connect	Connect	Connect	Connect
Visit-R	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB
	Mute	Connect	Connect	Connect	Connect	Connect	Connect	Connect
Common	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB
	Mute	Connect	Connect	Connect	Connect	Connect	Connect	Connect
ALS	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB
	Mute	Connect	Connect	Connect	Connect	Connect	Connect	Connect

Fig 55

If you would like to introduce a new parameter into a preset, highlight the parameter you would wish to introduce, right-click, select 'Save Parameter Value to Preset' and select the desired preset.

To save parameters that were changed while in online mode, make use of the parameter value transfer from online to design mode. When you switch to design mode select yes when prompted to copy device parameters. Now you can add the parameters, modules or devices to existing or new presets.



Fig 56

Preset Management

Under the Project heading you will find "Project Presets" which lists all presets for the project. Clicking on Project Presets opens up the Preset Manager.

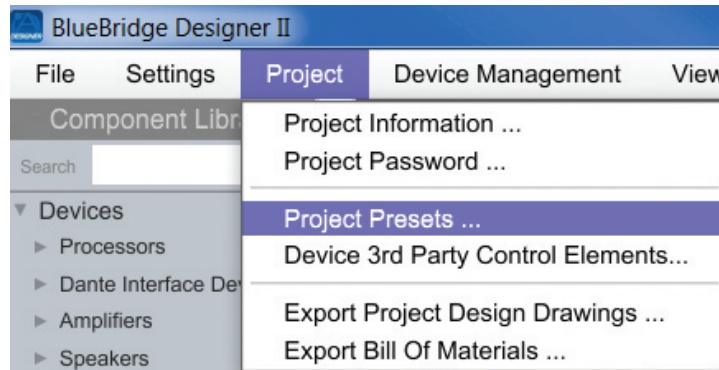


Fig 57

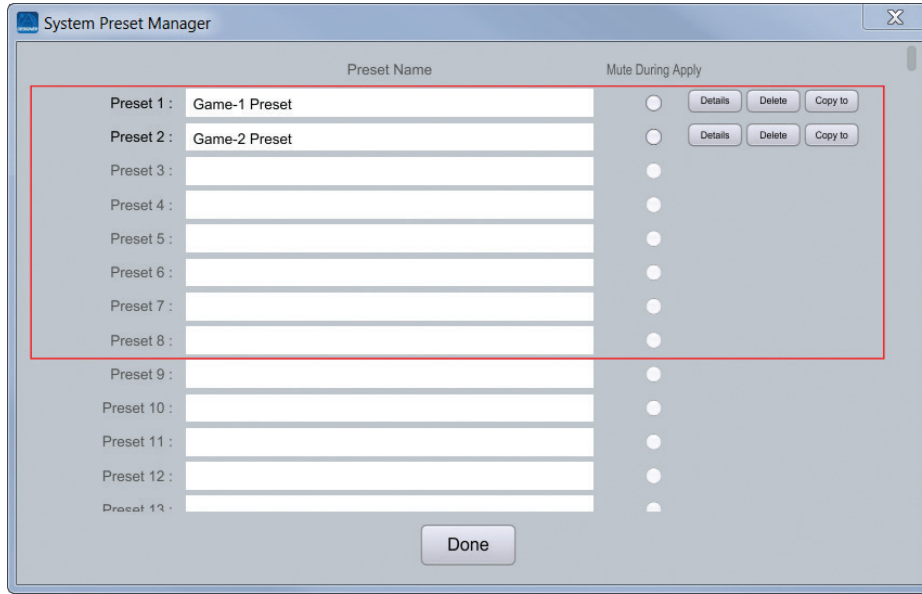


Fig 58

Preset Management can be used to rename copy and remove presets from the project file. To rename a preset, type the desired preset name for the corresponding preset.

The red box highlights presets that can be controlled by logic inputs. Using the 'Latch Button' in conjunction with a BlueBridge Controller device would be an effective way to quickly recall presets.

For example, you can mute all the inputs at the push of a single button, or use a preset to manage the audio routing to a specific room.

Checking the 'Remove' box will delete the preset from your project after saving.

The 'Presets Copy' function is used for duplicating presets and moving presets to different preset locations. After creating a preset, click the 'Presets Copy' button to open up the copy menu.

The first dialog asks where you which preset you would like to copy, and the second dialog simply asks which location you would like to copy to.

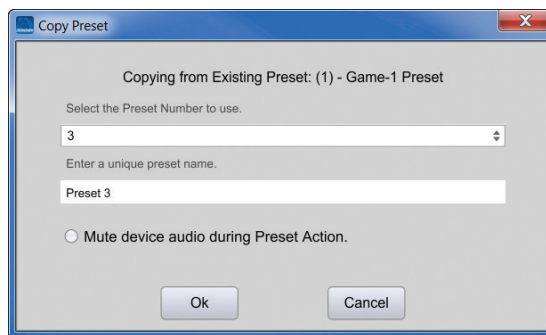


Fig 59

Click OK to apply your preset changes.

Remove Preset Data

Devices, Modules and Parameters can be removed from a preset using a similar method to adding them. Select the Parameter(s), Module(s) or Device(s), right click and select "Remove from Current Preset"

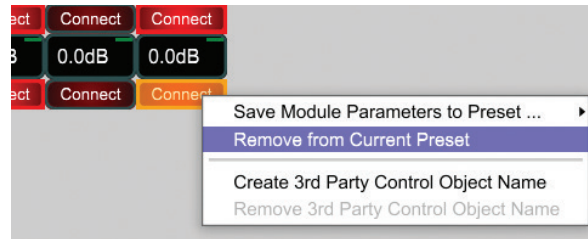


Fig 60

This will remove the data from the currently selected preset as displayed in the drop down menu. A preset must be applied for the "Remove from Current Preset" to be available.

Control Modules

Control Fader - A generic fader which is used as a reference point for control modules. The control fader can be mapped to an external controller (Either BlueBridge Control or 3rd party) to allow for a more advanced control structure.

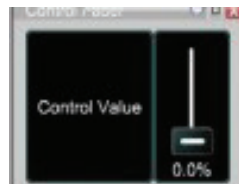


Fig 61

Control Inverter - Inverts the control signal polarity.

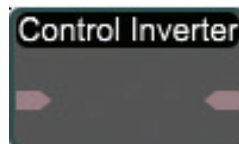


Fig 62

Control Range Detector - Set a specific range with high and low threshold values. This module outputs 2 values, one for 'in range' and the other for 'out of range'. Both of these output values are decided by the user.

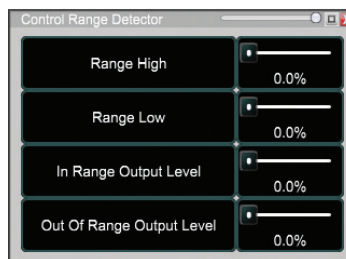


Fig 63

Control to Logic - User defined ON and OFF threshold values which converts the control signal to logic format. The user determines the output polarity as well.

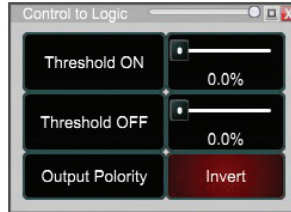


Fig 64

Logic to Control - Set a control value for both HIGH and LOW input logic signals.

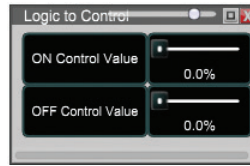


Fig 65

Audio Signal to Control - Converts an audio signal that is within the High and Low limits (dB) to a control signal after duration of the response time. This conversion can be done in either a linear or logarithmic mode.

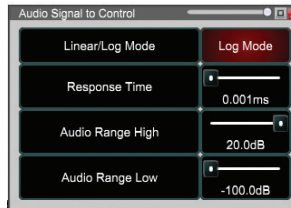


Fig 66

Voltage Controlled Amp - Adjusts the output gain of an audio signal relative to the control value input. Max gain and mute functions are available.



Fig 67

Logic Controlled Mute - Mutes the connected audio signal when a logic HIGH value is present on the control pin.



Fig 68

Control Meter - A simple metering tool that displays the level of the control value input signal.

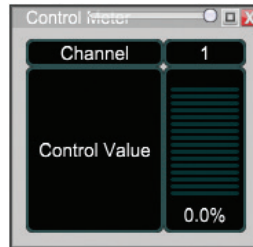


Fig 69

Delays

Delay 10ms - This module adds signal Delay (0 to 10ms, 0.01ms steps). Bypass feature included.

Delay 50ms - This module adds signal Delay (0 to 50ms, 0.05ms steps). Bypass feature included.

Delay 100ms - This module adds signal Delay (0 to 100ms, 0.1ms steps). Bypass feature included.

Delay 500ms - This module adds signal Delay (0 to 500ms, 0.5ms steps). Bypass feature included.

Delay 1s - This module adds signal Delay (0 to 1s, 1ms steps). Bypass feature included.

Delay 2s - This module adds signal Delay (0 to 2s, 2ms steps). Bypass feature included.

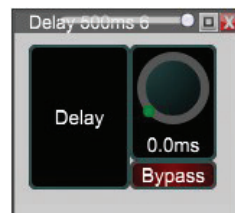


Fig 70

Dynamics

Compressor - Reduces the signal level above the Threshold (-60 to 20dB, 0.5 dB steps) value by the Ratio (1:1, 40:1, 1:1 steps) set. Attack (0.1 to 2000ms, 0.1ms steps) adjusts the time to reduce the signal once the signal has been exceeded. Once the signal has fallen below the threshold the Release (0ms to 10s, 1ms) time is the time to stop compressing the signal. Bypass feature and RMS meter (Compression) included.

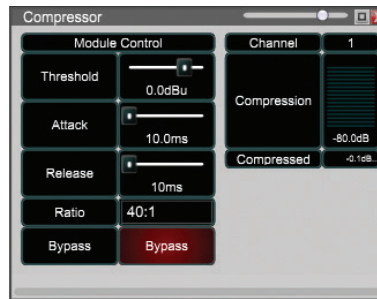


Fig 71

Side Chain Compressor - As above, but with side chaining & knee control. This allows multiple compressors to be tied together with a reference side chained line. This allows the multiple compressors to be controlled from a single source for the control of dynamics rather than just the input. This prevents one channel from being greatly compressed & other channels to not be. Keeps things even. In addition, the “knee span” will adjust the rate that the ratio is applied after passing over the threshold. IE, if set to a ratio of 40:1, with a knee span of 5db, it will hit the threshold, then take 5db before it hits the full ratio.

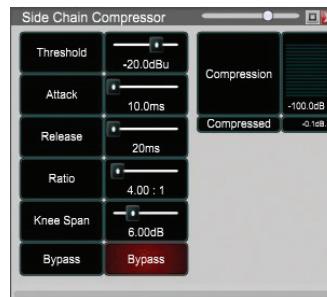


Fig 72

Peak Limiter - Reduces the signal level above the Threshold (-60 to 20dB, 0.5 dB steps) value by 40:1. Once the signal has fallen below the threshold the Release (0.1 ms to 2s, 0.1ms) time is the time to stop compressing the signal. Bypass feature and RMS meter (Compression) included.

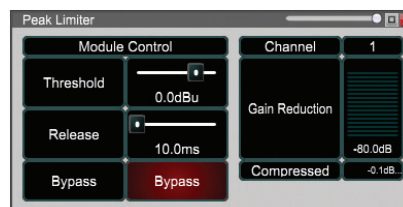


Fig 73

Expander (Noise Gate) - Reduces the signal level below the Threshold (-60 to 20dB, 0.1 dB steps) value by the Ratio (1:1, 40:1, 1:1 steps) set. Attack (0.1 to 100ms, 0.01ms steps) adjusts the time to reduce the signal once the signal has dropped below the threshold. Once the signal has raised above the threshold the Release (0 ms to 10s, 1ms) time is the time to stop compressing the signal. Bypass feature and RMS meter (Compression) included.

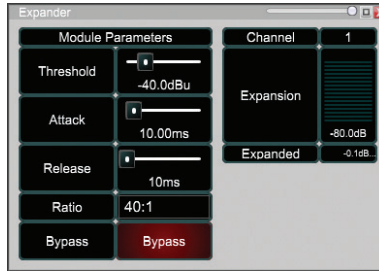


Fig 74

Side Chained Expander - As above with the Expander, except with the addition of Side Chaining as described under "Side Chained Compressor"

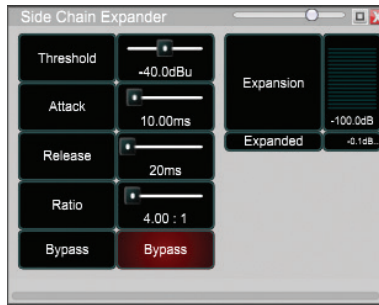


Fig 75

Ducker - Attenuates channel 1 input by the Depth (0dB to 100dB, 0.01 dB steps) value when channel 2 surpasses the Threshold (- 60dB to 0dB, 0.01 dB steps) value. Attack (10 to 500ms, 1ms steps) adjusts the time to reduce the signal once the signal has been exceeded. Once the signal in channel 2 has fallen below the threshold the Release (10ms to 60s, 1ms steps) time is the time to stop attenuating the signal. The Hold Time (10ms to 10s, 1 ms steps) sets the period before the signal is released after channel 2 drops below threshold. Attenuation is shown with an RMS meter.

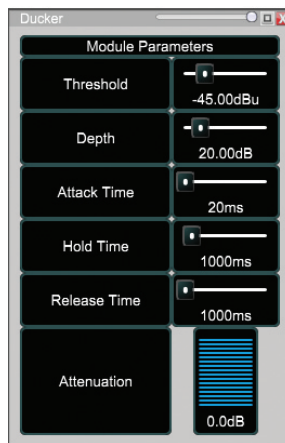


Fig 76

Ambient Noise Compensator - The Ambient Noise Compensator is used for speech & paging applications. It adjusts its output level automatically in response to variations in the ambient noise level. The ambient noise is measured in the output gaps, when no signal to the outputs is present, or drops to below a pre-defined threshold.

Max Gain (-30 to +20db) is the limit that the ANC will raise the signal by.

Min Gain (-30 to +20Db) is the lowest level that the signal will lower itself to.

Speed (1-60 Seconds) is the amount of time the volume change occurs over.

Gap Threshold (-60 to -20db) is the level that the module sees as the point where it will take a sample from the mic on the modules background input.

Gap Time (1-2000ms) is the time sampled for the reference ambient noise level.

Gap Interval (60-3600 Sec) is the period between the samples of background noise.

Averaging Count (1-10) is how many samples are averaged to determine the background noise.

Ambient Noise (-60 to -12 Db) is the reference background noise level with no program material.

Update Gain Pressing this button causes the ANC to immediately update its gain prior to the next scheduled reading.

Acquire Threshold Pressing this button with no program source input calibrates the normal ambient level.

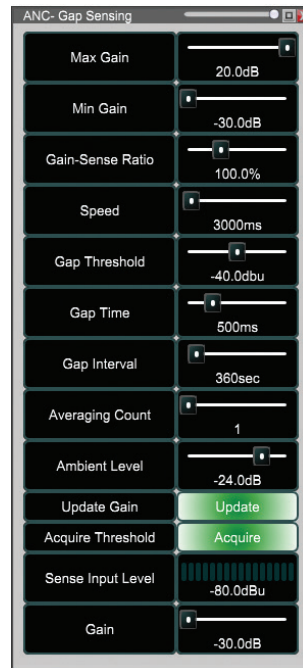


Fig 77

Equalizers

Graphic Equalizer - Increase / decrease the EQ Level (-30dB to +15dB, 0.1dB steps) within 10, 15 or 31 bands across the frequency range. Set the number of bands in Component Properties. Bypass feature included for each band.

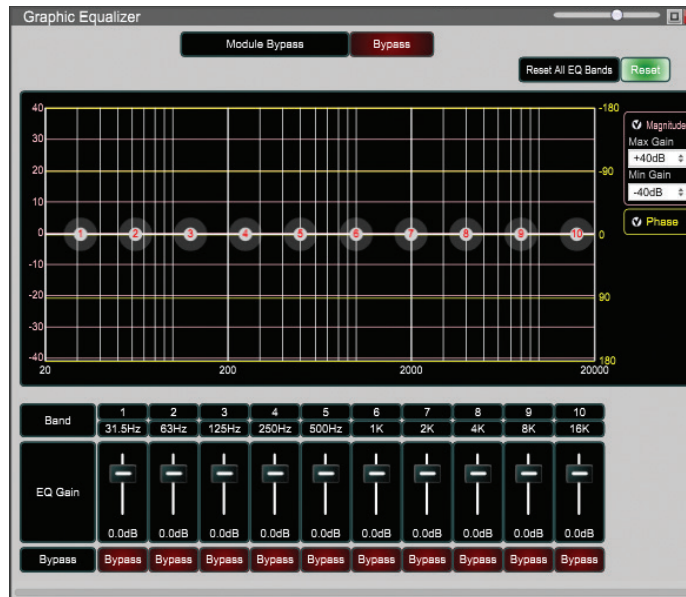


Fig 78

Parametric Equalizer - Increase / decrease the EQ Level (-30dB to +15dB, 0.1dB steps) amount at the target Frequency (20Hz to 20kHz, 1 Hz steps) with roll off controlled by the Bandwidth (0.02 to 4oct, 0.01oct steps) setting. Up to 8 bands per channel, set the number of bands in Component Properties. Includes Bypass feature for each band.

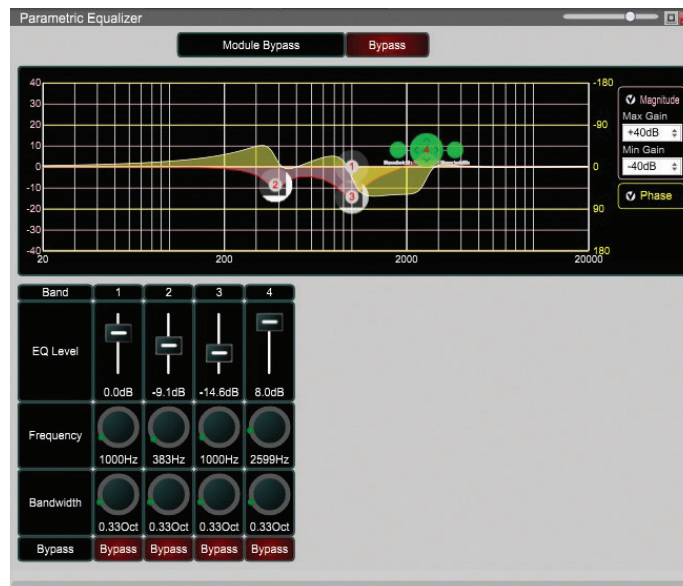


Fig 79

Filters

High Shelf Filter - Increase / decrease frequencies above target Frequency (20Hz to 20kHz, 1 Hz steps) by the EQ Level (-30 to +15dB, 0.1dB steps). Roll off controlled by the Bandwidth (0.01 to 4.00oct, 0.01 steps) setting. Bypass feature included.

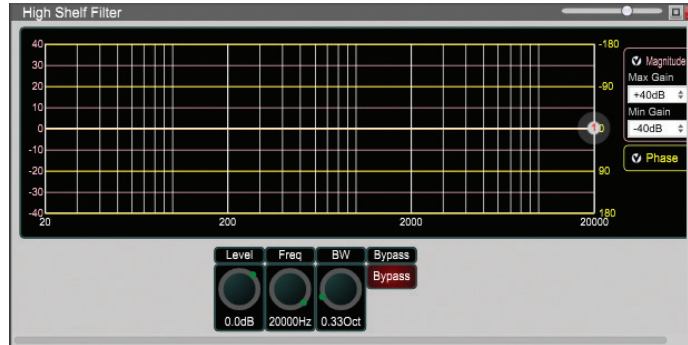


Fig 80

Low Shelf Filter - Increase / decrease frequencies below target Frequency (20Hz to 20kHz, 1 Hz steps) by the EQ Level (-30 to +15 dB, 0.1dB steps). Roll off controlled by the Bandwidth (0.01 to 4.00oct, 0.01 steps) setting. Bypass feature included.

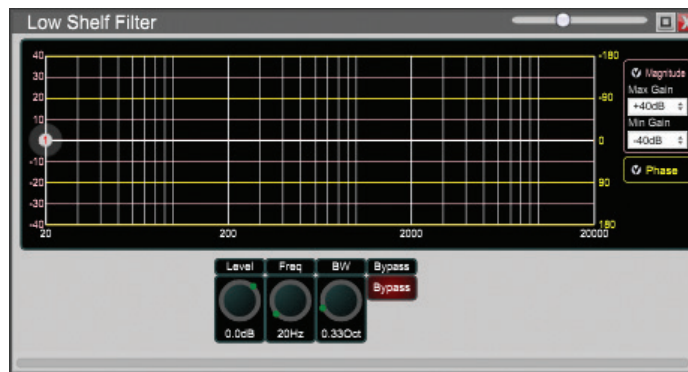


Fig 81

All Pass Filter: First Order - Unity gain filter with 180 deg. phase shift over dynamic range, phase shift of Degree (0 to 179.5, 0.5 steps) at target Frequency (20Hz to 20kHz, 1 Hz steps). Bypass feature included.

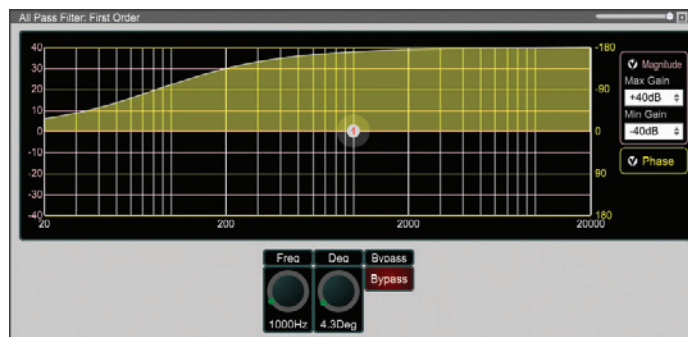


Fig 82

All Pass Filter: Second Order - Unity gain filter, 180 deg. phase shift at target Frequency (20Hz-20kHz, 1 Hz steps) with roll off controlled by the Bandwidth (0.01to 4.00oct, 0.01 steps). Bypass feature included.

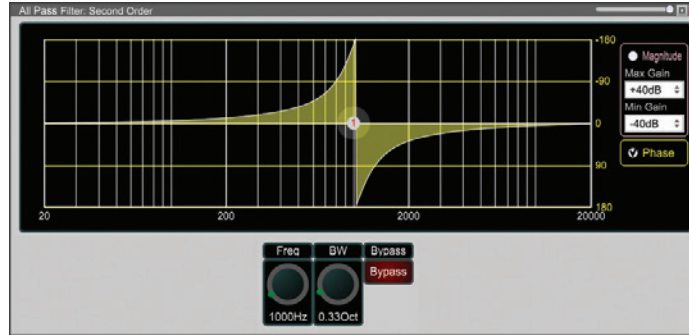


Fig 83

High Pass Filter 6-24 dB/Oct - Attenuates frequencies below target Frequency (20Hz to 20kHz, 1 Hz steps) with filter Type (Butterworth, Linkwitz-Riley and Bessel) and Slope (6 to 24dB/oct, 6dB/oct steps). Bypass feature included.

High Pass Filter 6-48 dB/Oct - Attenuates frequencies below target Frequency (20Hz to 20kHz, 1 Hz steps) with filter Type (Butterworth, Linkwitz-Riley and Bessel) and Slope (6 to 48dB/oct, 6dB/oct steps). Bypass feature included.

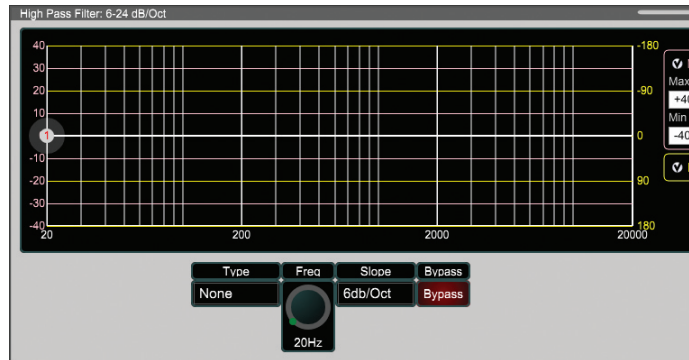


Fig 84

Low Pass Filter 6-24 dB/Oct - Attenuates frequencies above target Frequency (20Hz to 20kHz, 1 Hz steps) with filter Type (Butterworth, Linkwitz-Riley and Bessel) and Slope (6 to 24dB/oct, 6dB/oct steps). Bypass feature included.

Low Pass Filter 6-48 dB/Oct - Attenuates frequencies above target Frequency (20Hz to 20kHz, 1 Hz steps) with filter Type (Butterworth, Linkwitz-Riley and Bessel) and Slope (6 to 48dB/oct, 6dB/oct steps). Bypass feature included.

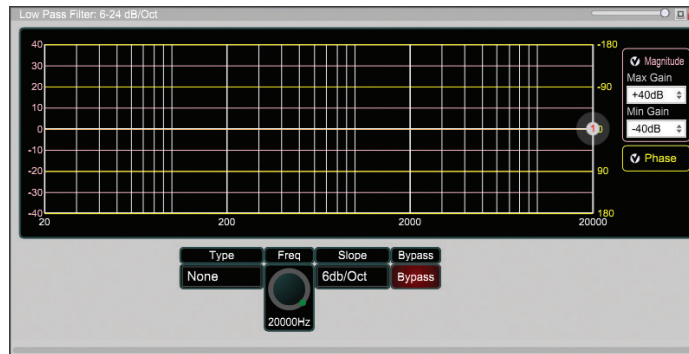


Fig 85

Auto Feedback Suppression - The Auto Feedback Suppression module creates a notch filter around loud frequencies to eliminate Feedback. There are eight bands that automatically adjust to create the filters as necessary. Certain master parameters used to fine tune the module are described below. The Threshold (-100dB to 10 dB, 0.1dB steps) parameter is the minimum level before suppression will occur. The lower the Sensitivity (very low, low, medium, high very high) the higher the level of the offending tone needs to be before suppression. Maximum Depth (0dB to 40 dB, 0.01dB steps) sets the largest amount of attenuation applied to the offending tone. Notch Step Size (0.5dB to 3 dB, 0.01dB steps) sets the rate Maximum Depth is reached. The starting minimum bandwidth of the filter provided is set by Default Bandwidth. Recycle Delay (0.1hr to 100hr dB, 0.01dB steps) is the minimum length of time a notch filter is held before the attenuation is reduced by the Notch Step Size. Use Recycle Enable to activate Recycle Delay. Level, Frequency and Bandwidth for each band are displayed in the module. Use Type to switch between Dynamic (Dyn) and Fixed filter types.

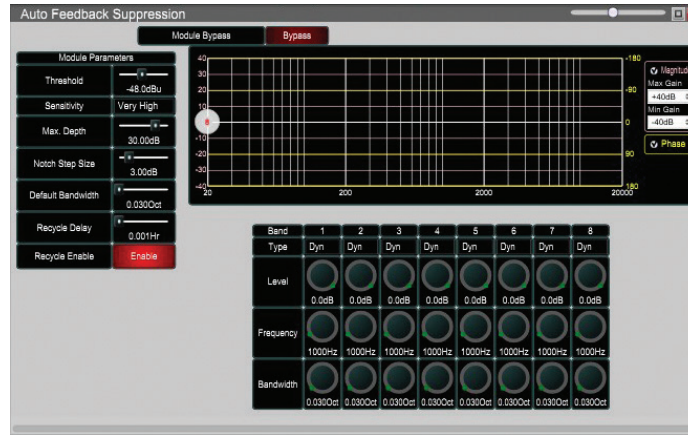


Fig 86

Loudspeaker Management - This module combines all the normally used modules for Loudspeaker Management in one convenient module. You can select as many inputs / outputs as needed (In the Component Properties tab) and alter all their parameters in one easy place. You can find out more about each module in the Loudspeaker Management module by reading up on the different separate modules it contains with in their appropriate section of this manual. Module Bypass is just that- It bypasses any processing & just sends any signal from the input directly to the output.

Delay (0-500ms) is how much delay is introduced to the signal.

HPF (High Pass Filter) passes all frequencies above what it is set for.

LPF (Low Pass Filter) passes frequencies below the set frequency.

PEQ (Parametric EQ) allows set frequencies to have notch or gains added with variable bandwidth as needed.

Limiter This works with the dynamics of the signal, limiting loud signals above the set threshold.

Gain simply adjusts the output as required.

Mute simply mutes all output from the module.

Polarity inverts the source signal.

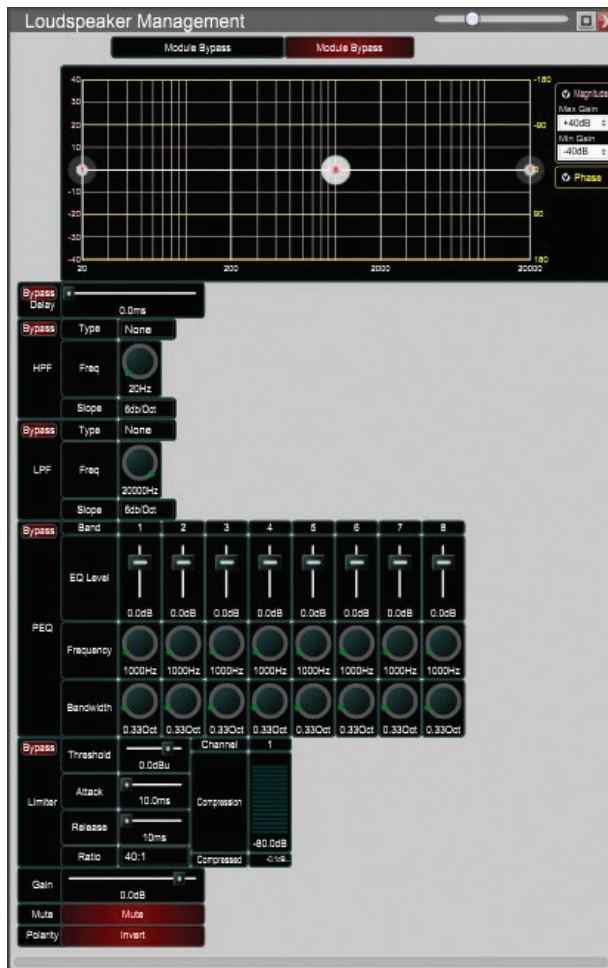


Fig 87

Print Design to Jpeg or Autocad

At any point in the design process, you have the ability to print a copy of your project as a .jpg or .dxf image file.

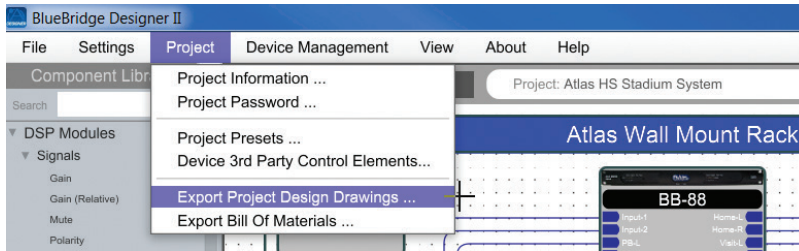


Fig 88

This feature will produce an image of your work area with a resolution of 1800 x 1200 (pixels) at 96dpi. BlueBridge Designer allows you to print a Jpeg image of the project overview and the internal design files of BlueBridge processors. The Jpeg image will be watermarked (Figure 92) with project information taken from the data entered in the Document Information section of the Object properties. (Figure 91)

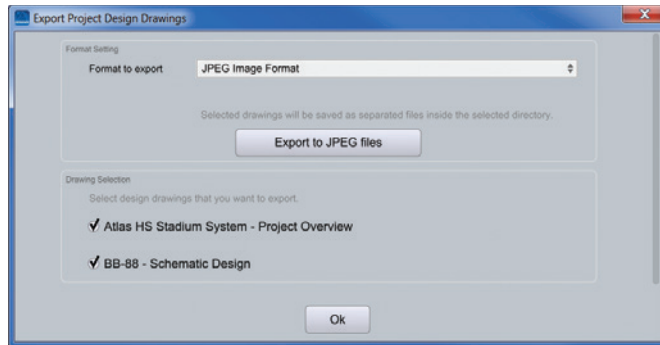


Fig 89

To access the Document Information properties, click the white background of the Project Overview. Here you may enter the project title, revision number & the date.

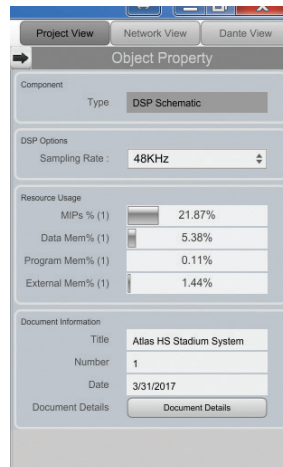


Fig 90

Clicking on Document Details will allow the filling in of the Company Name, Address, Author & Application Notes.

Project Information

Project Data

Company Name : AtlasIED

Company Address : 4545 E. Baseline Rd.
Phoenix, AZ 85042

Author : D. Murphy

Description : BB-88 Design Template

Notes :

Document Data

Document Name : Atlas HS Stadium System

Document Number : 1

Document Date : 3/31/2017

Ok Cancel

Fig 91

AtlasIED

4545 E. Baseline Rd.
Phoenix, AZ 85042

Title :

Number :

Author : D. Murphy

Date :

Fig 92

Bill of Materials

In many project situations, it is very important to keep cables and hardware organized. BlueBridge Designer has a feature that automatically generates an organized document listing all physical cabling and hardware description required for your project. The core dynamics of the Bill of Materials generator lies in the Project View. In the Project View you have the ability to add hardware components from the library. Elements such as CD Players, microphones, amplifiers, and speakers, all play an important part in the compilation of the bill of materials. Wires can also be labeled according to your physical project needs, in order to assist your real-world organization.

Click on a connection point to access its component properties where you can label the connections. While working in the project overview, there is a section in the component properties titled Cable Information. This is where you will insert descriptive text which translates to the Bill of Materials printout. Like connection points, generic hardware can be described in the component properties menu by name and manufacturer.

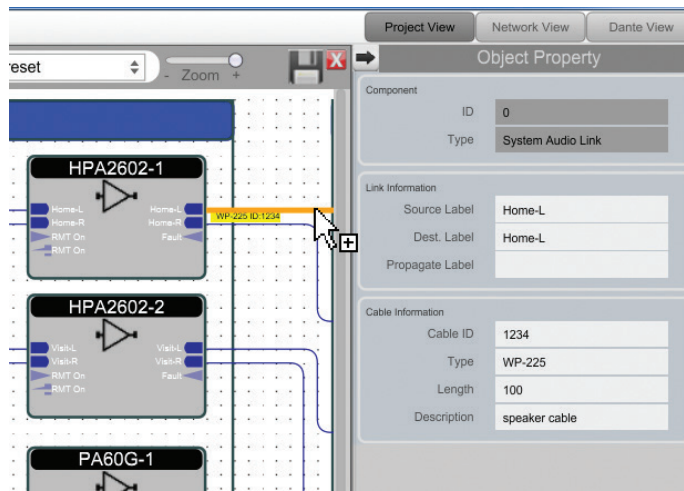


Fig 93

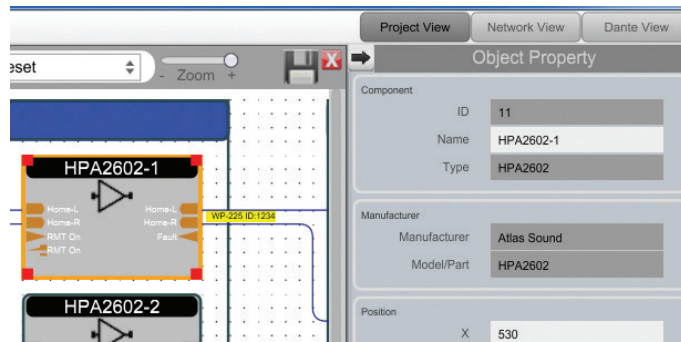


Fig 94

After adjusting all of your component and wiring data, it is time to export the Bill of Materials. The bill of materials will print to a Excel file format with proper tabling and formatting.

Click Project > Export Bill of Materials to File.

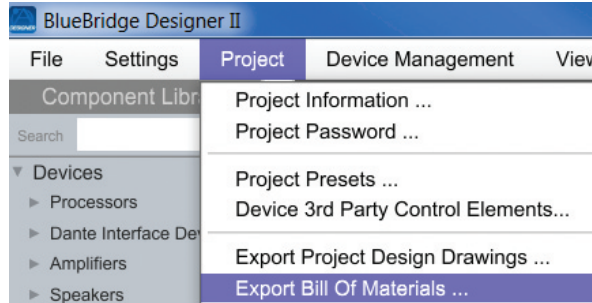


Fig 95

You may need to save your project first. In the save as menu, navigate to your destination folder, type in the file name as you wish, and then click save.

The Bill of Material overview pops up.

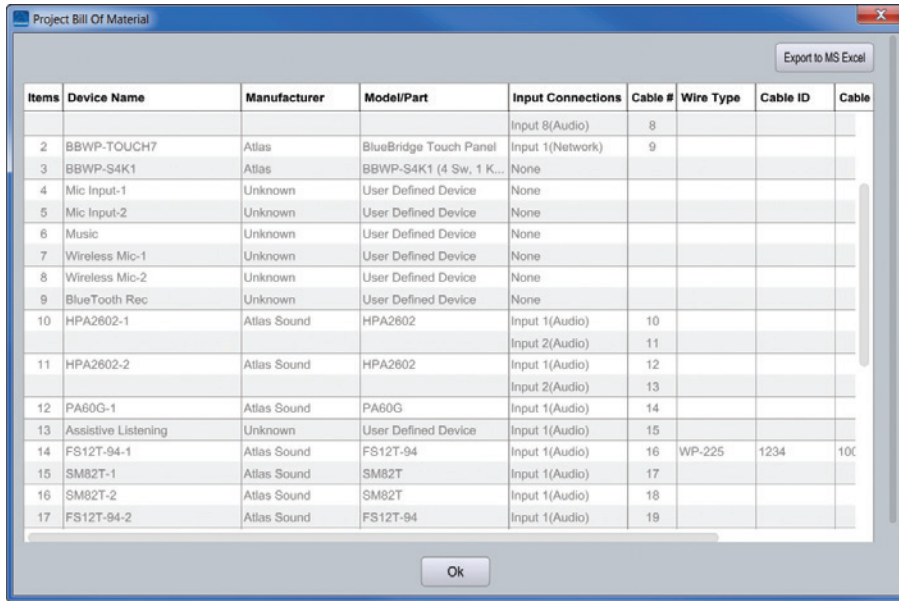


Fig 96

From here, clicking on "Export to MS Excel" will generate an XLS file with the information entered. This can be saved as desired.

Generators

Sine Tone - Creates a sine wave with Level (-100 to 20dB, 0.1 dB steps) and Frequency (20Hz to 20kHz, 1Hz steps). Module includes Mute control.

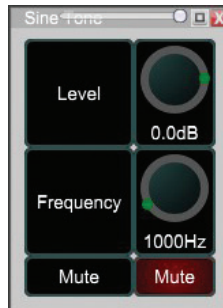


Fig 97

Sine Sweep - Creates a frequency changing sine wave with Level (-100 to 20dB, 0.1 dB steps), Start Frequency (20Hz to 20kHz, 1Hz steps), End Frequency (20Hz to 20kHz, 1Hz steps), Sweep Time (1ms to 60s, 1ms steps) and Mute control. Use Repeat to continuously cycle and (Re)Start to start the cycle from the beginning.

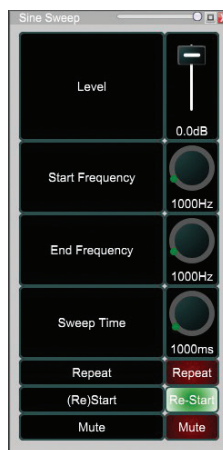


Fig 98

White Noise - Creates white noise with Level (-100 to 20dB, 0.1 dB steps) and Mute control.

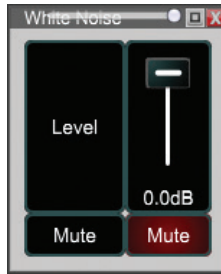


Fig 99

Pink Noise - Creates pink noise with Level (-100 to 20dB, 0.1 dB steps) and Mute control.

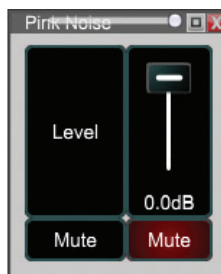


Fig 100

I/O

Analog Input - Analog input entering the DSP processor. The input module contains RMS level Meter (-80 to 40dB, 0.1dB steps), Gain (- 100 to +15 dB, 0.1dB steps), Mute and Polarity control for each input channel.

Analog Output - Analog output exiting the DSP processor. The output module contains RMS level Meter (-80 to 40dB, 0.1dB steps), Gain (-100 to +15 dB, 0.1dB steps), Mute and Polarity control for each output channel. Green indicates active physical I/O for your processor model.

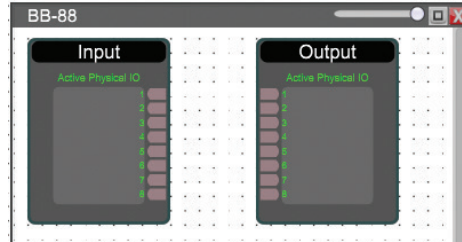


Fig 101

Network Input - Network input entering the DSP processor. The input module contains RMS level Meter (-80 to 40dB, 0.1dB steps), Gain (-100 to +15 dB, 0.1dB steps), Mute and Polarity control for each input channel.

Network Output - Network output exiting the DSP processor. The output module contains RMS level Meter (-80 to 40dB, 0.1dB steps), Gain (-100 to +15 dB, 0.1dB steps), Mute and Polarity control for each input channel.

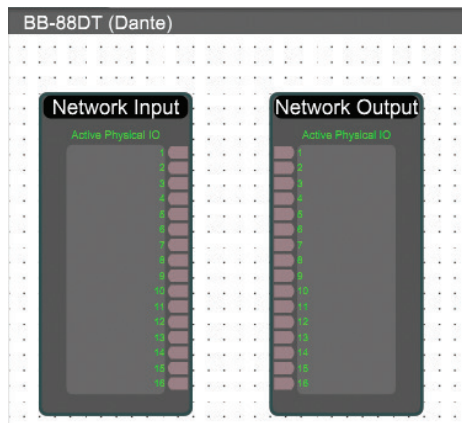


Fig 102

Logic Input - Logic input entering the DSP processor. The input module contains Enable and Inverse control for each input channel.

Logic Output - Logic output exiting the DSP processor. The output module contains Enable and Inverse control for each output channel.

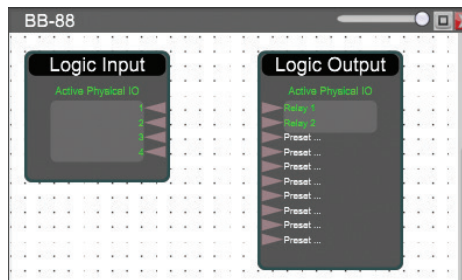


Fig 103

Logic Modules

AND - All inputs logic high for logic high output.



Fig 104

OR - Any input(s) logic high for logic high output.

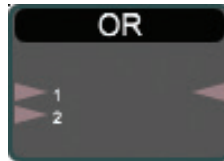


Fig 105

NOT - Output is opposite logic signal of input.



Fig 106

NAND - Logic high output unless all inputs are logic high.



Fig 107

NOR - Logic high output if all inputs are logic low.



Fig 108

XOR - Output logic low If all inputs are the same output is logic low, otherwise logic high.



Fig 109

XNOR - If all inputs are the same output is logic high.

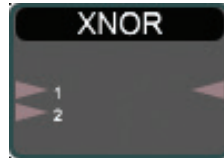


Fig 110

SR-Flip Flop - For each trigger (low-to-high signal) at the Trigger pin, Output Q will switch logic values. The module displays the current State of the Q pin. Output /Q is always the opposite of Output Q. While the Set pin is logic high Output Q will be logic high and While the Reset I/O is logic high Output Q will be logic low.

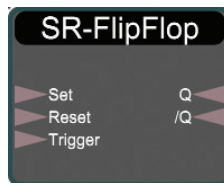


Fig 111

Delay - When the input is logic high for at least the On Time (0 to 60s, 1ms steps) the output will be logic high for the On time and logic low for the Off Time (0 to 60s, 1ms steps). Bypass and output State indicator features present.

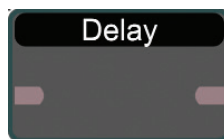


Fig 112

Multiplexer - Route one of eight inputs to the output using the three Ctrl (Control) I/O's. Channel selected is shown by the module.

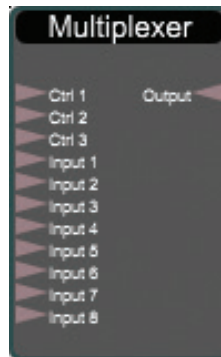


Fig 113

De-Multiplexer - Route the input to one of the eight outputs using the three Ctrl (Control) I/O's. Channel selected is shown by the module.

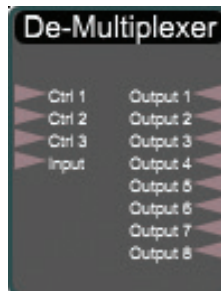


Fig 114

Encoder - Convert eight logic inputs to three binary inputs. Encoded Channel is shown by the module.

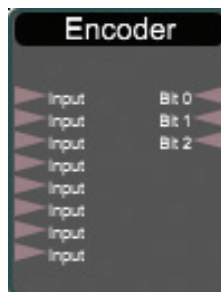


Fig 115

Decoder - Convert three binary inputs to eight logic outputs. Decoded Channel is shown by the module.

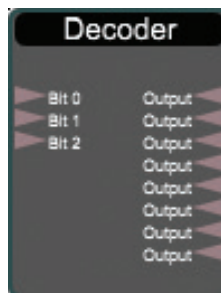


Fig 116

Counter - Each trigger (low-to-high signal) at the Trigger I/O adds one to the Count (0 to 99999999), at Threshold (0 to 99999999) the output state becomes high. State indicates the current output condition. Use Force Trigger to add one to the count total. Force Reset and a trigger (low-to-high signal) at the Reset I/O will reset the Count value to zero.

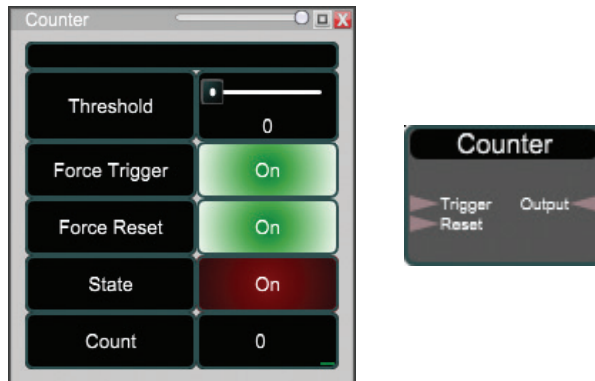


Fig 117

Delay Hold - When the input is triggered (low-to-high signal) or the Force Trigger button is used the Delay I/O will activate for the Delay Time (0.01 to 5000s) as can be seen by the Delay State. After the Delay Time, The Hold I/O will activate for the Hold Time (0.01 to 5000s) depicted by the Hold State. Loop Mode will continuously cycle the Delay and Hold for one input trigger (low-to-high signal). Use the Reset button to reset and Force trigger to activate the module. Allow Trigger sets whether a new trigger can occur during an event (Delay and Hold active cycle).



Fig 118

Latch Button - Use the Latch button to output a logic high or logic low signal with ON/OFF. Reverse the logic output with the Inverse button.



Fig 119

Momentary Button - Creates a trigger (low-to-high signal) event at the output with the ON/OFF. Reverse the logic output with the Inverse button.



Fig 120

Radio Button - Output a logic high from the output selected with Radio Btn all other outputs are logic low. Reverse all logic outputs on the module with the Inverse button.



Fig 121

Indicator - Displays the current State of each input.



Fig 122

Meters

RMS Meter - Root Mean Square (RMS) signal meter displayed in bar graph format, RMS Level (-80dB to +40dB, 0.1 steps).

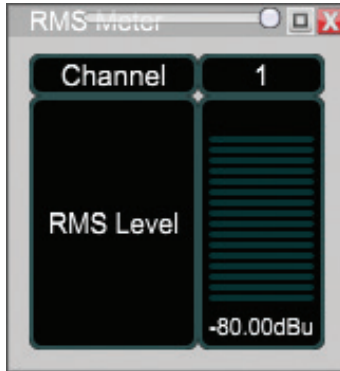


Fig 123

Mic / Line Pre-Amp Setup

Mic / Line Gain - Input signal Mic/Line Gain (-40 to 25 dB in 0.01dB steps) for each input.

Phantom Voltage - Turn 48V Phantom voltage on / off for each Mic input.

Mic / Line - Mic / Line selection for each input. Mic line selection gives hardware +40dB gain.

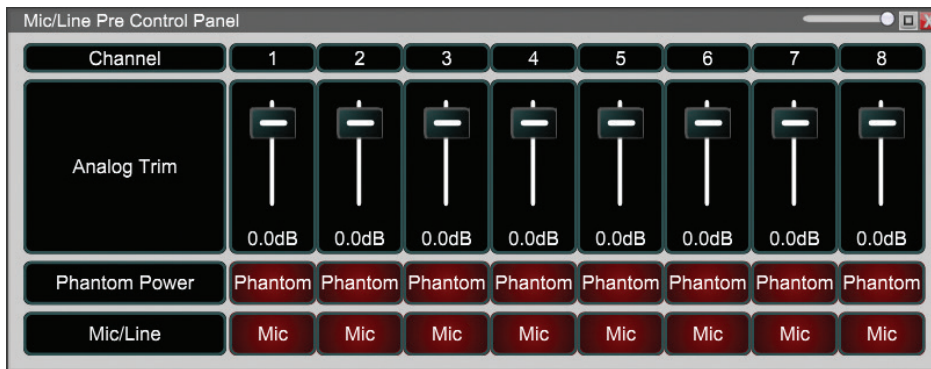


Fig 124

Mixers

Matrix Mixer - Analog combining of Input to Output (-100dB to 0dB, 0.01dB steps) channels with Connect (On/Off). Also Master Gain (- 100dB to 0dB, 0.01dB steps) and Mute control for each Output.



Fig 125

Matrix Selector - Use the drop down menu to assign each Output an Input.

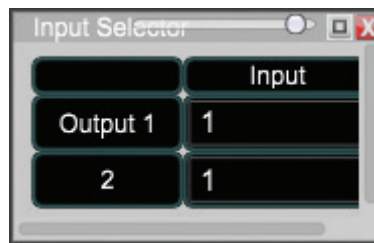


Fig 126

Gating Auto Mixer - The gating auto mixer would typically be used in a conference setting where multiple Mics are in use but only one (or a few) should be on at any time. This module turns on Mics based on their input signal as compared to the level of the other Mics. Once a channel is activated it typically stays on until another signal is larger (someone else starts to speak). More sophistication is available with number of open Mics, priority and sensitivity controls.

Each input has a Mute and Gain (-100 to 16 dB, 0.01dB steps) control. An RMS Meter (-80 to 40 dB, 0.1 dB steps) and Auto Gain meter (-100 to 0 dB, 0.1 dB steps) are included to show the input level and the calculated gain for each channel. Manual On changes the gain from automatic (off) to fixed (on). The Priority parameter ranges from 0 to 10 (with 0 being the highest and 10 the lowest). An input channel with a higher priority needs less level to be gated on by increasing the input by 2 dB/priority step. The Sensitivity parameter (-16 to 12dB in 0.01dB steps) determines at what level the channel is gated on compared to the automatically determined threshold. For example if the sensitivity is set to -1dB, an input signal above -1dB of the threshold will be gated on.

For the output, Gain (-100 to 16 dB, 0.01 dB steps) and Mute control are provided. The time for a Mic to be gated off is set by the Hold Time (50 to 6000 ms, 0.001 ms steps). The Off Gain (-90 to -10 dB, 0.1dB steps) determines the gain for an off channel. Last Mic On mode determines which Mic stays on when no one is talking. This can be set to none, last Mic used or a specific input. The maximum number of open (on) Mics is set by the number of Open Mics. The Open Mic Attenuation (0 to 6dB, 0.01 dB steps) attenuates the output by the set amount whenever the number of open Mics is doubled.

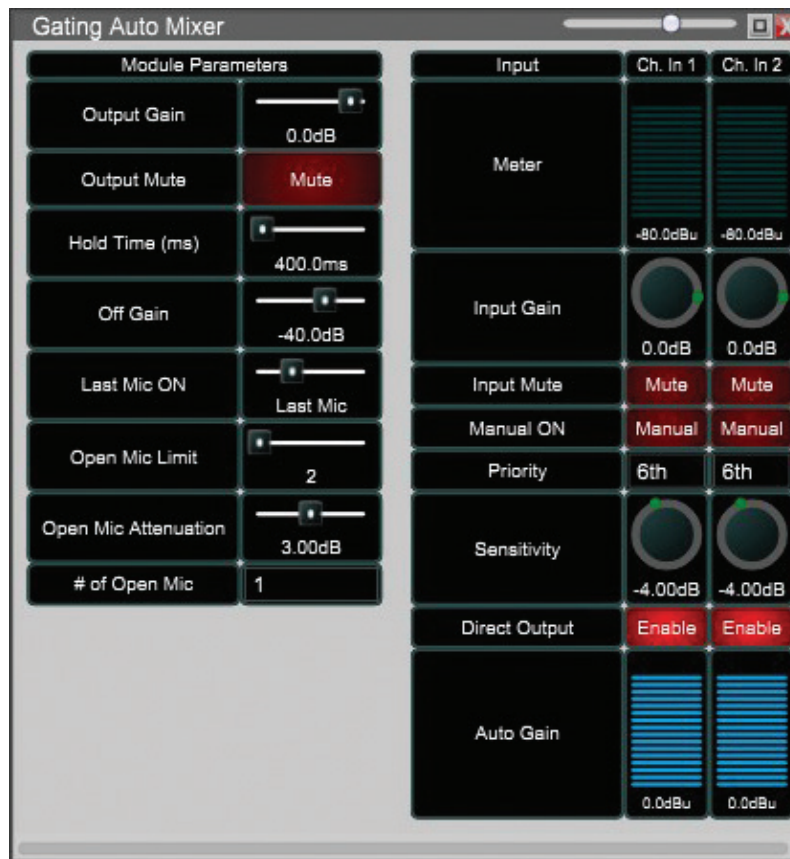


Fig 127

Gain Sharing Auto Mixer - The Gain Sharing auto mixer allows the automatic mixing of input channels to one output channel based on input signal levels. The louder the particular input channel the louder it will be at the output channel. Each input has a Mute and Gain (-100 to 16 dB, 0.01dB steps) control. An RMS Meter (-80 to 40 dB, 0.1 dB steps) and Auto Gain meter (- 100 to 0 dB, 0.1 dB steps) are included to show the input level and the calculated gain for each channel. Manual On changes the gain from automatic (off) to fixed (on). While Manual On, the gain for the channel is fixed and it will not affect other channels. The Priority parameter ranges from 0 to 10 (with 0 being the highest and 10 the lowest). An input channel with a higher priority will have a larger gain applied dependent on the Slope value and difference in priority between channels.

For the output, Gain (-100 to 16 dB, 0.01 dB steps) and Mute control are provided. The length of time for gain to occur is set by the Response Time (0.2 to 2000 ms, 0.1 ms steps). The Slope (1 to 3, 0.001 steps) determines the gain difference between priorities. With a Slope of 1 there is no gain. With a Slope of 2, 2dB per point of priority difference between channels. Finally a Slope of 3 creates a 4dB gain per point of priority.

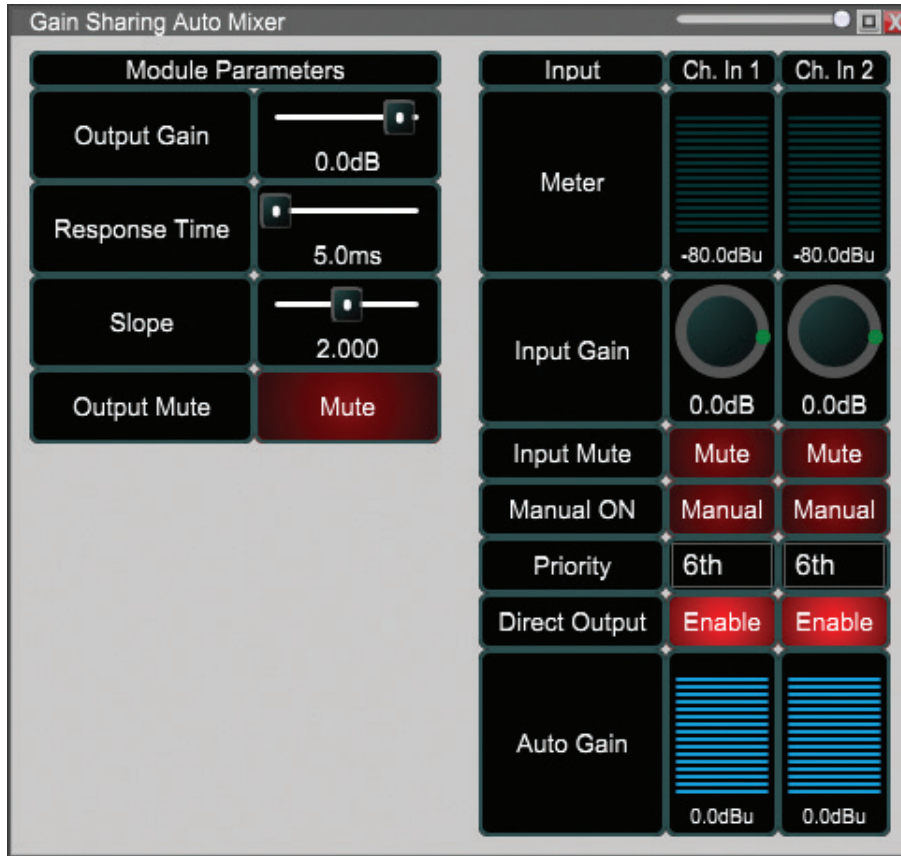


Fig 128

LR Mixer - Mixes inputs before splitting into Left and Right outputs based on the Right Ratio for each channel. Input / Output Gain, (-100dB to 15dB, 0.1dB steps) and Mute control included as well as input Polarity control.

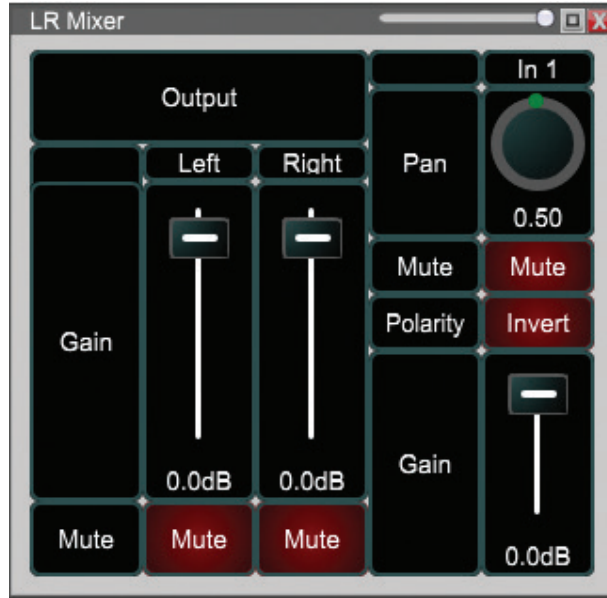


Fig 129

LCR Mixer - Mixes inputs before splitting into Left, Right and Center outputs based on the Right Ratio. Input / Output Gain, (-100dB to 15dB, 0.1dB steps) and Mute control included as well as input Polarity control.

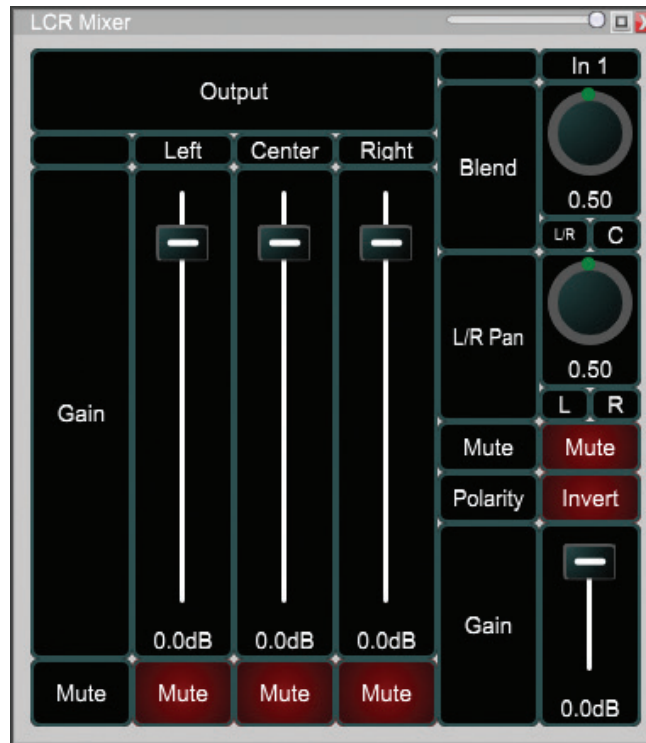


Fig 130

Priority Selector - Multiple channel input, single output. Output is the input On channel with highest Priority (First-Tenth) channel above the Threshold (-60dB to 0dB) value when Threshold Enable is activated. Output Mute and Hold Time (10ms to 30s) are included as well as Signal, (above threshold) and Channel Selected indicators.

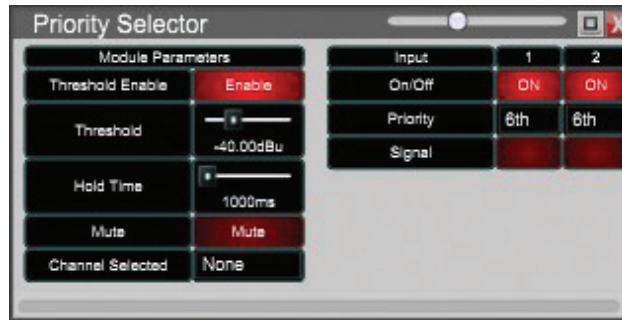


Fig 131

Summer - Summed multiple input channel audio is released as single channel output.

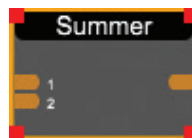


Fig 132

Signals

Gain - Signal level control, Gain (-100dB to +15, 0.1dB steps). This is used to raise or lower the signal level.

Mute - Channel Mute. This completely nullifies the signal in order to eliminate all audio.

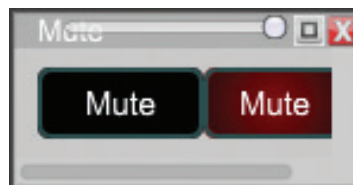


Fig 133

Polarity -The Polarity module is used in order to reverse the phase of the signal.

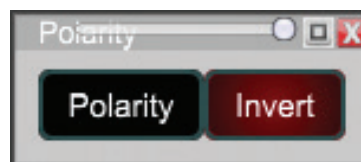


Fig 134

Logic Introduction

What is Logic? - The term Logic refers to the sequence of operations and conditioning required for a specific action to be performed. Within BlueBridge Designer, this sequence is to be carried out on a physical electronic signal in order to perform programmed actions such as triggering presets or muting an audio channel.

Where Does this Electronic Signal Originate? - The electronic signal in question (referred to as the logic input) is generated by creating a wired connection between the physical logic input ports (1 through 4) (found on the reverse of your processor) and the corresponding ground pin (G). Refer to the Hardware section of logic help to learn more about the physical connections.

Operations and Conditions (Modules) - Logic operations are programmed within BlueBridge Designer through the use of wiring and modules, much like that of an audio signal. Each function, operation, or condition has its own module block that can be inserted and wired into your design. Refer to the Modules section of logic help to learn more about the individual logic modules available in BlueBridge Designer.

Features and Typical Uses - The Logic Output module allows for two basic functions being triggering the physical relays and triggering preset recalls. This basic approach is very open ended in the fact that presets can perform any change of settings to the device that you wish and the external relays can complete any possible electronic circuit you require. The physical output contacts do not provide any specific voltages, meaning that powered circuit of any voltage or power requirements will be compatible with your processor. BlueBridge Designer processors have physical logic I/O capabilities allowing for added functionality such as:

- Emergency Mute
- Contact Switch Input
- LED Display
- Preset Triggering
- Logic Controlled Mute
- Many More Possibilities

Hardware - The logic I/O structure can be broken down to three basic groups being logic inputs, output relay 1, and output relay 2.

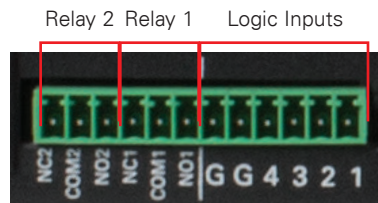


Fig 135

Logic Inputs - There are 6 contacts dedicated logic input signals. This breaks down further as four input signal contacts and two dedicated as ground. Logic input signals are momentary unless otherwise programmed in BlueBridge Designer. Creating a physical connection between any input channel and Ground (G) will send a logic HIGH signal to the processor through the corresponding channel. This signal is to be programmed via BlueBridge Designer.

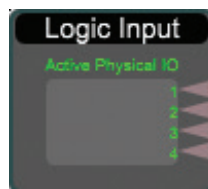


Fig 136

Relays 1 & 2 - Each relay has a normally open (NO) contact, a normally closed (NC) contact, and a common. When a HIGH signal reaches the Relay contact in the Logic Output Module (Figure), both the NO and NC physical contacts will invert, either closing the external circuit (NO) or opening it (NC).

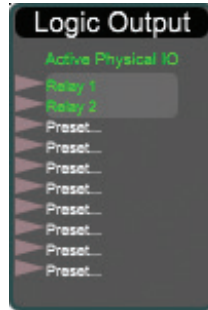


Fig 137

Design Introduction - Designing logic circuits with BlueBridge is very similar to that of creating design files. The initial blank palette features both an input and output module, and requires the virtual wiring of logic modules (blocks) to complete the I/O circuit.

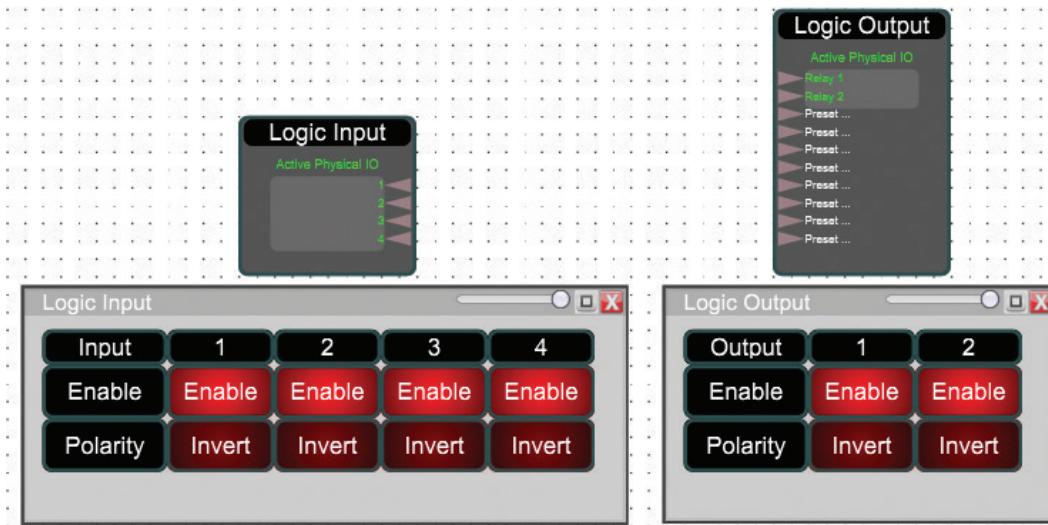


Fig 138

Logic Input - The logic input is the first point that the physical logic signals enter the DSP design file. This module has 4 nodes labeled 1-4 by default, any and all channels can be either inverted or disabled. These nodes represent the physical logic input contacts on the hardware.

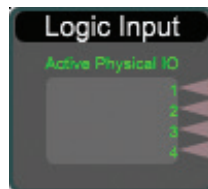


Fig 139

Logic Output - The logic output module is the final destination of the logic signal from where you can decide to either trigger the internal physical relays, or trigger presets 1 through 8. Each relay has a normally open (NO) contact, a normally closed (NC) contact. When a HIGH signal reaches the Relay contact in the Logic Output Module, both the NO and NC physical contacts will invert, either closing the external circuit (NO) or opening it (NC). Open the Logic Output module to find that the output relays can be enabled / disabled or inverted if need be. The Preset Trigger feature is simple in functionality. Send a HIGH signal to the desired channel in order to recall the corresponding preset.



Fig 140

Component Libraries - The component library is the BlueBridge Designer database for all hardware, DSP, Logic, and Control modules. To add any component that suits your design, simply click, hold and drag the desired module in to the work area.

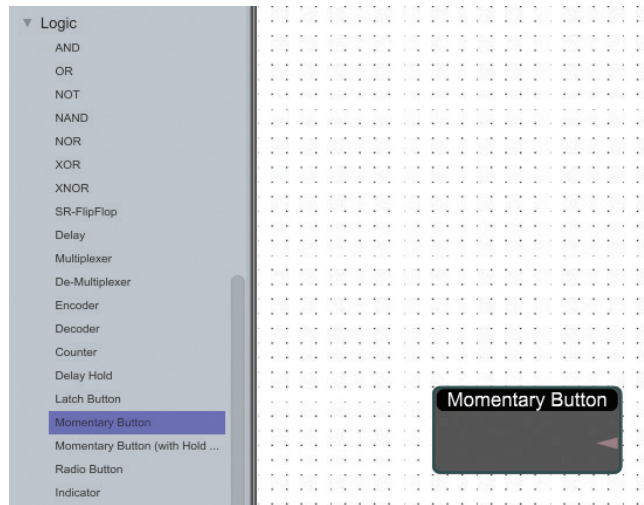


Fig 141

Wiring - Modules are wired together when you click, hold and drag from the output connection node of one module to the input node of another. A logic signal will be displayed as a RED wire in order to differentiate from entangled audio wires that may be present.

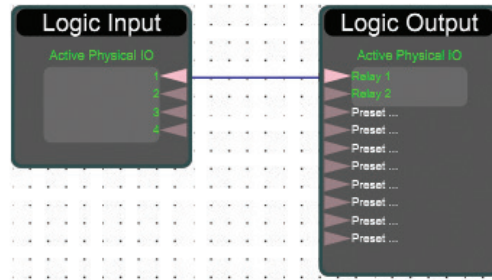


Fig 142

Depending on the modules being wired, you can link multiple wires to single nodes. This will send the signal through both wires simultaneously as a parallel connection. In figure 4 , notice that the input signal is being routed to the Logic Controlled Mute as well as Relay 1. One practical use for this configuration is having an external LED light up when the emergency mute button is active.

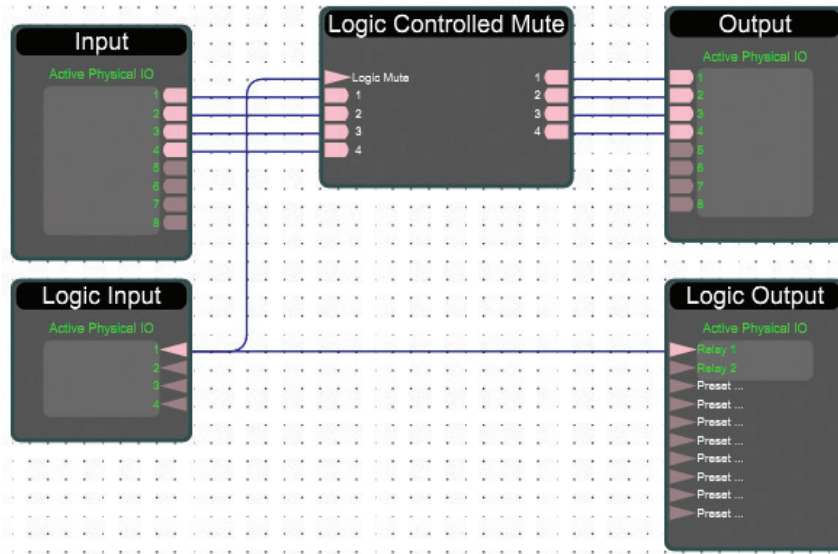


Fig 143

Control Objects - Like logic, Control signals are data signals that are used as a utility for functionality, however control values are represented as a range. This range can be manipulated and detected via various threshold tools to allow for intricate control over various applications.

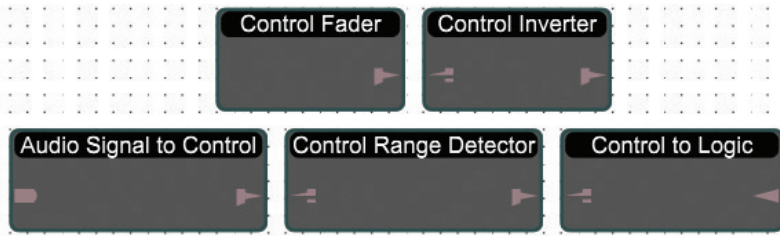


Fig 144

Some modules are dedicated to the conversion of signals, be it from Audio to Control, Control to Logic, or Logic to Control. These tools can be used in conjunction with each other for such purposes as using a line level signal to trigger a preset (Figure 7) which in turn could turn on an emergency mute, for example.

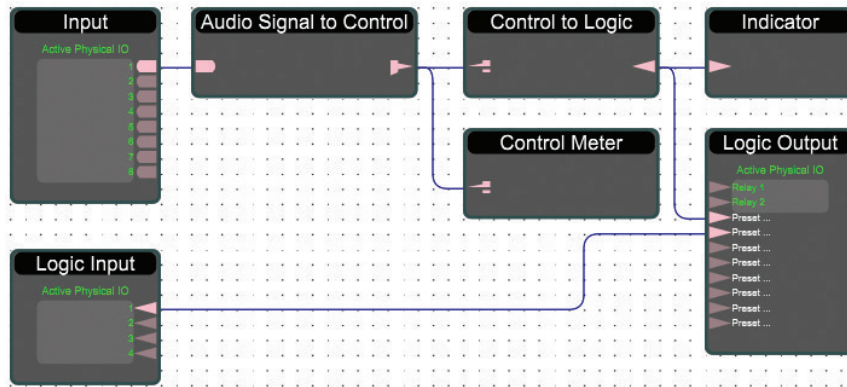


Fig 145

3rd Party Control

TASCAM CD Player - An example has been built to setup control buttons to send control string to TASCAM CD Player. We are able to send Play, Pause, Stop, Previous, Next command to the device. In the example (Figure 147) the button is highlighted and device properties need to be entered under "3rd Party Control Device Config" in the properties window. Select the Detailed Config button and it will take you to a window to enter the detailed control string information (Figure 148)



Fig 146



Fig 147

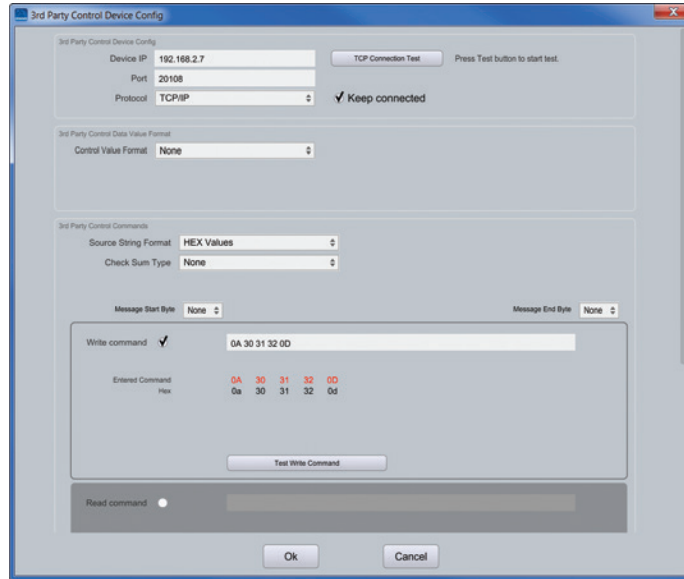


Fig 148

Limited Warranty

All products manufactured by AtlasIED are warranted to the original dealer/installer, industrial or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. This warranty shall extend from the date of purchase for a period of three years on all AtlasIED products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty. AtlasIED will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our returns policy set forth below. When products returned to AtlasIED do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any nonwarranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

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Service

Should your BlueBridge module require service, please contact the AtlasIED warranty department at 1-877-689-8055, ext. 277 or support.atlasied.com to obtain an RA number.

AtlasIED Tech Support can be reached at 1-800-876-3333 or support.atlasied.com.

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