



# **White Paper**

## **How to Use the VoiceBox with a Biamp Audia System**

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**Revision 002**

# 1 Objective

The objective of this white paper is to explain how to correctly set up a system that includes products from the Biamp Audia range and Attero Tech VoiceBox 4 I/O product.

The VoiceBox 4 I/O CobraNet Audio Interface is a cost effective 4 in/4 out mic/line preamp. It can be used to feed audio into the Biamp Audia system. It can also output audio from the Biamp system. It can act as an input and an output device simultaneously.

First, we will discuss the setup required on the Biamp system using the Biamp Audia software. We will then use the Attero Tech Control Center application to complete the CobraNet setup on the VoiceBox.

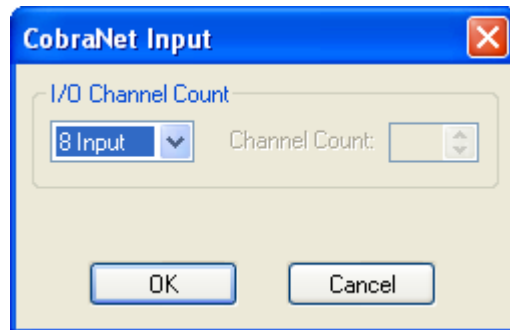
Our example only sets up the systems to send audio in a single bundle to a single source so only unicast bundles are required. Multiple bundles may be used and bundles may be multi-unicast or multicast if multiple recipients are needed.

## 1.1 Setting up the Audia System

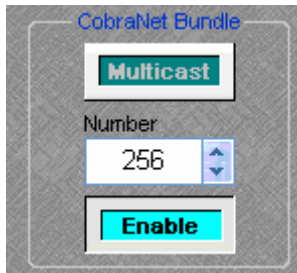
To receive audio from a VoiceBox, set up a CobraNet Input block from the “Input Output” tab. To transmit audio to a VoiceBox, set up a CobraNet Output block from the “Input Output” tab. If the VoiceBox is simultaneously sending and receiving audio, both a CobraNet Input block and a CobraNet Output block will be needed.

Click and drag the desired block or blocks onto the drawing and then set up each block that is needed. The setup routine is identical for either the input or the output block.

The default channel count of a block is 8. The VoiceBox only has 4 inputs and 4 outputs so we need to set up the block to match. Right-click on the block. This brings up a menu. From this menu select “Edit Block Parameters”. A window appears as shown to the right. Use the drop down box to select 4 input or 4 output depending on the type of block being configured, and then click OK.



The block will then update with the correct number of audio channels and will also rename itself to reflect the change.



Next, double-click on the block to open its configuration window.

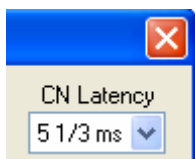
A new window will appear. At the bottom, the CobraNet setup is shown (see left). Use this to configure the bundle number to be used to pass audio.

Ensure the Enable button is highlighted and thus active. If it is not, click on the Enable button once. Next, enter the bundle number to be used by clicking on the text box and typing a value or by using the up and down arrows.

**Note:** Each CobraNet bundle transmitter must be configured with a unique bundle number. If the Audia is sending and receiving audio to the VoiceBox, the received bundle must be a different number than the transmitted bundle number.

**Note:** Other settings exist on the configuration panel. These controls do not directly affect the interface between Audia and the VoiceBox so they are outside the scope of this document. These values may also need altering in order to complete the configuration of this block for the application.

This block is now ready to be connected to other blocks in the design within the Audia software. Repeat this process if you use more than one block.



The Audia system is preset at a sample frequency of 48 kHz. However, there is an option to alter the latency of the transmissions in Tools->Equipment Table. The default for this value is 5 1/3ms. The affects of changing this value are noted in the CobraNet Programmers guide and the Audia Help. The value has to be set before a design is compiled.



## 1.2 Setting up the VoiceBox

Ensure the Attero Tech Control Center Software is running and connected to the CobraNet system.

Not all settings persist when the VoiceBox is powered down. In order to preserve all settings, Persistence must be enabled. This can be done from the Main Form of Control Center. Select the VoiceBox to be configured. In the lower half of the screen, there is a check box for the Persistence.

## 1.3 VoiceBox Audio Processing Setup

The VoiceBox contains some digital audio processing elements and a Matrix Mixer. The first step of setting up the VoiceBox is to ensure the processing is set up correctly. Ensure the VoiceBox to be set up is still selected and click the Device Setup button. For each of the input channels check the following:

- The Compressor bypass is enabled.
- For all EQ parameters, the Gain control is set to 0dB
- The Gain control is set to 0 and the Mute and Invert buttons are not active

Next, click onto the Matrix Mixer tab and ensure that

- All Input faders are set to 0dB and the Mute, Invert, and Solo buttons are all inactive.
- All Local Output faders are set to 0dB and the output Mute and Invert buttons are inactive.
- All CobraNet Output faders are set to 0dB and the output Mute and Invert buttons are inactive.
- All Output Limiters on the local outputs are all bypassed.

Finally, make sure all Matrix Mixer knobs are set to -100 dB (fully counter-clockwise) except for the following which should be set at 0 dB (fully clockwise):

- C11 - OUT1
- C12 - OUT2
- C13 - OUT3
- C14 - OUT4
- IN1 - CO1
- IN2 - CO2
- IN3 - CO3
- IN4 - CO4

To ensure the new setup is retained during power off, make sure the Freeze button is pressed.

If all is setup, you can close the form and move onto the bundle setup.

## 1.4 Setting up the VoiceBox Output Bundle

This setup step is only required if the PC is going to use the VoiceBox to pass data to the Audia system.

Ensure the VoiceBox is still selected and click the Bundle Setup button. In the transmit section, set up bundle transmitter TX1 with the bundle number used during set up of the CobraNet Input block on the Audia system previously.

The Submap setup should include all the active local inputs. All the remaining Submaps should be set to 0. If you are using four channels, the Submap for the bundle should read 1, 2, 3, 4, 0, 0, 0, 0.

When setting the Submap, ensure the bit depth is set to 20. Next, set the Unicast mode to "U" for unicast-only.

Finally, ensure the Mode Rate Control is set correctly. It must match the sample rate and latency set on the Audia system. Once all setup is complete, click the Apply button to finalize.

The VoiceBox should now be able to feed audio into the Audia system.



## **1.5 Setting up the VoiceBox Input Bundle**

This setup step is only required if the PC is going to use the VoiceBox to receive data from the Audia system.

Ensure the VoiceBox is still selected and click the Bundle Setup button. Type the bundle number used during setup of the CobraNet Output block on the Audia system previously into the edit box for RX1. Next, set up the Submap for the number of channels being received. The Submap for the bundle should read 33, 34, 35, 36, 0, 0, 0, 0.

Finally, ensure the Mode Rate Control is set correctly. It must match the Mode Rate Control set on the Audia system.

Click the Apply button to finalize the settings. Audio should now be available on the VoiceBox outputs from the Audia system.