



# **White Paper**

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

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**Revision 001**

# 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 MatchBox product.

The MatchBox uses CobraNet to pass audio from a PC to the Audia system for processing and also to receive audio sent out by the Audia system.

First, we will discuss configuring the MatchBox Devices. This setup will determine exactly what audio inputs and outputs will be required. From there we will move to the setup required on the Biamp system using the Biamp Audia software. Finally, we will use the Attero Tech Control Center application to complete the CobraNet setup on the MatchBox.

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 the MatchBox Configuration

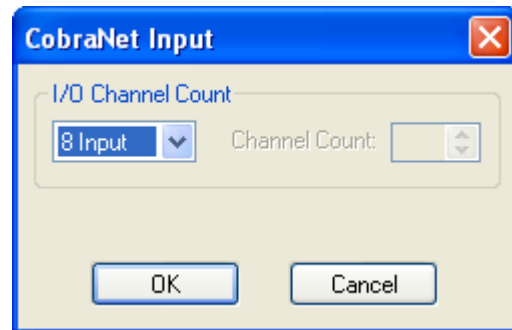
Run the MatchBox Configuration Tool (instructions on installing this tool can be found in the MatchBox USB User Manual). Select the desired configuration by selecting the number of devices to act as inputs and outputs. For PC audio output to the Audia system only, use 4-out. If audio is to be passed to the PC from the Audia system, select either 3-out / 1-in for 2 channels of input or 2-out / 2-in for four channels of input.

## 1.2 Setting up the Audia System

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

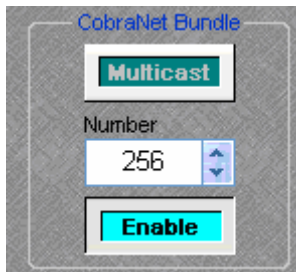
Click and drag the desired block or blocks onto the drawing and then set up each block that is needed. The setup routine is identical for either the input or the output block.

The default channel count of a block is 8. If the MatchBox is set in 4-out mode, the input box can be left as is. For 3-out / 1-in mode, the output block needs to be configured with six channels and the input block configured with two channels. For 2-out / 2-in mode, both the input and output block need to be configured with four channels.



To configure the channels in a block, right-click on the block. This brings up a menu. From this menu, select "Edit Block Parameters". A window appears as shown above. Use the drop down box to select the number of desired channels, then click OK.

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



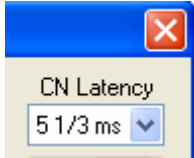
Next, double-click on the block to open its configuration window. A new window will appear. At the bottom, the CobraNet setup is shown (see left). Use this to configure the bundle number to be used to pass audio.

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 MatchBox, 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 MatchBox 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.

### 1.3 Setting up MatchBox to Audia Outputs

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

Ensure the Attero Tech Control Center Software is running and connected to the CobraNet system. Select the MatchBox to be configured and open the Bundle Setup form for it. In the transmit section, set up bundle transmitter TX1 with the bundle number used when you set up the CobraNet Input block on the Audia system previously.

The Submap and Subcount setup for the bundle is determined by the number of devices used as outputs. The table below shows the setup to be used depending on the device setup selected.

MatchBox Device Setup	Transmitter Submap Settings	Subcount
4-out only	1, 2, 3, 4, 5, 6, 7, 8	8
3-out / 1-in	1, 2, 3, 4, 5, 6, 0, 0	6
2-out / 2-in	1, 2, 3, 4, 0, 0, 0, 0	4

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 Mode Rate Control set on the Audia system. Once all this is complete, click the Apply button to finalize. The PC should now be able to play audio to the Audia system.

### 1.4 Setting up Audia to MatchBox Inputs

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

Ensure the Attero Tech Control Center Software is running and connected to the CobraNet system. Select the MatchBox to be configured and type in the bundle number used when you set up 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 table below shows the setup to be used depending on the device setup selected.

MatchBox Device Setup	Receiver Submap Settings
4-out only	N/A
3-out / 1-in	33, 34, 0, 0, 0, 0, 0, 0
2-out / 2-in	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 and the PC should now be able to record or play audio sent from the Audia system.