

COBRA Audio Box Program

What is the Audio Box?

The COBRA Audio Box is a wireless MP3 player that allows you to play music in sync with your fireworks. You connect your audio box to the sound system and press a single button to start your show using the 18R2. As the script fires, the audio stays in sync. Please know that the Audio Box is still in a beta release, but is fully covered under the COBRA warranty. Please read this document to make sure you understand how to use the COBRA Audio Box with the COBRA system.

What do I need to prepare for the Audio Box?

Before you can use the COBRA Audio Box, you need to perform the following:

1. Make sure your systems are running 3.0.1. To upgrade, you will need the [COBRA Wireless Reprogrammer](#). To learn how to upgrade your units, view the [Using the Wireless Reprogrammer](#) instructions.
2. Prepare your MP3 audio file using [Audacity](#) only. See [Appendix A - Prepare MP3 128kbs File](#).

How do I use the Audio Box?

1. Save the MP3 file to the USB drive named **audiobox.mp3**. The filename must be audiobox.mp3. Before saving, make sure you prepare the MP3 file (see [Appendix A - Prepare MP3 128kbs File](#)).
2. Insert USB into Audiobox. This can be done before or after the Audiobox is powered on. If you remove the USB stick while the Audiobox is powered on, it will self-reset. This is normal.

Note: If the Power LED on the rocket switch blinks, turn off the Audio Box, wait 5 seconds, and turn back on.

3. Connect the Audiobox to any number of sound systems using the headphone, RCA, and / or 1/4" jacks. The headphones both supply L and R channels in the same output jack.
4. Press and release the Audio TEST button to start playing the audio to get your sound levels correct. You can use the volume knobs on the Audiobox and also your sound system to obtain the best quality. We suggest a volume of about 70% on the Audiobox. To stop the audio, press and release the Audio TEST button again.

If you press and hold the Audio TEST button, the audio will play for as long as the button is held. When released, the audio will stop.

5. In your cobra.csv script, add a 5th argument to the header row to indicate you want Audiobox to play your audio. In Excel, this looks as follows. You can also reference the sample cobra.csv file provided with this document.

	A	B	C	D	E
1	#Trigger Channel	Trigger Button	Confirmation Button	Return Channel	
2	1	1		1 audiobox	
3	#Event Time	Channel	Cue	Description	
4	00:00:1.0s		1	1 Comet	
5	00:00:2.0s		1	1 Mine	
6	end				
7					

6. Load the cobra.csv script into your 18R2. The script should load successfully with all green LEDs displaying.
7. Make sure your Audiobox is on and connected to your sound system. Note the Audiobox will recognize as a

module count and displays signal strength on channel 99. For example, if you have 5 modules and 1 Audiobox, you will see “6” display as the number of units in both TEST and ARM mode. Make sure you see this value as it indicates proper function.

8. Run your script on the 18R2 and the Audiobox will start playing music. If you press ARM to pause and resume, the Audiobox will resume along. If you turn off the Audiobox and turn it back on while the 18R2 script is running, it will catch up and play alongside in sync to the script automatically.
9. That's it! Have fun and make sure to read the Troubleshooting / Known issues section below.

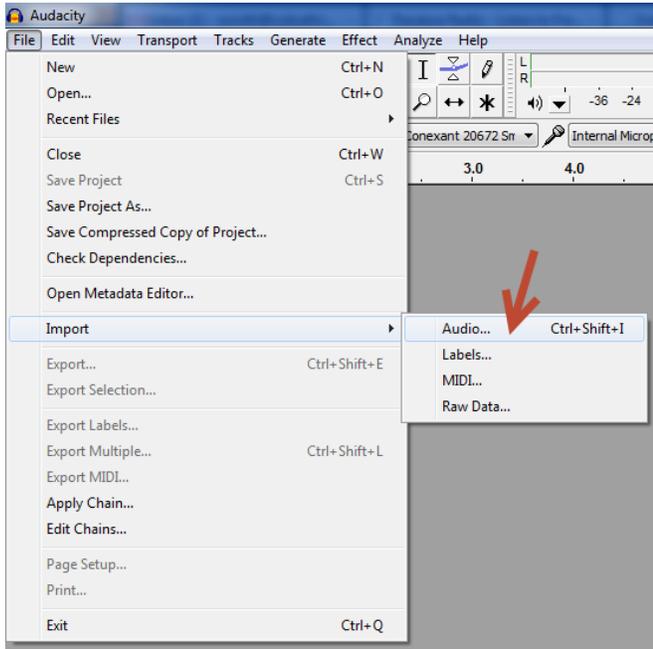
PLEASE READ!

- The Audiobox has an operating time of about 4 hours. There is no sleep mode. We suggest new AA batteries for each show. We are looking to introduce sleep mode.
- The audiobox will stop playing audio when the script is finished. If your audio continues, even for only a few seconds after the script finishes, add a dummy cue at a later time whole event time is longer than your audio file.
- Add some silence / no events to the beginning of your audio file and script. About 5 seconds is sufficient. This is because the audiobox will self-align when the show starts. We are working to improve / eliminate this in a software release.
- Early in the software development, we had cases where the Audiobox would stop playing audio mid-stream. We believe this has been resolved due to some changes and can no longer reproduce. If the Audiobox stops mid-show in playing audio, it will self re-start and pick up where it left off. The pause is about 6 seconds. We don't expect this to occur, but want to make you aware of this as part of the beta is to confirm whether this is still occurring.
- Some USB sticks may not operate properly with the Audiobox. Make sure to test your audio and USB drive before the show. In some cases, the current draw of the USB may be too high and cause the Audiobox to re-start over and over. Please try a different USB drive. If this problem happens, it will happen right away. In short, if the USB is working, it should work fine long term. Any issues with the USB drive will be apparent right away.
- When pausing and resuming your script, you may notice a small "screech" or "pop". This is the audio re-aligning after the re-start event. This will be fixed by having the script realign more smoothly through a rate increase vs. shift. This is a software fix and will be addressed in the production release.

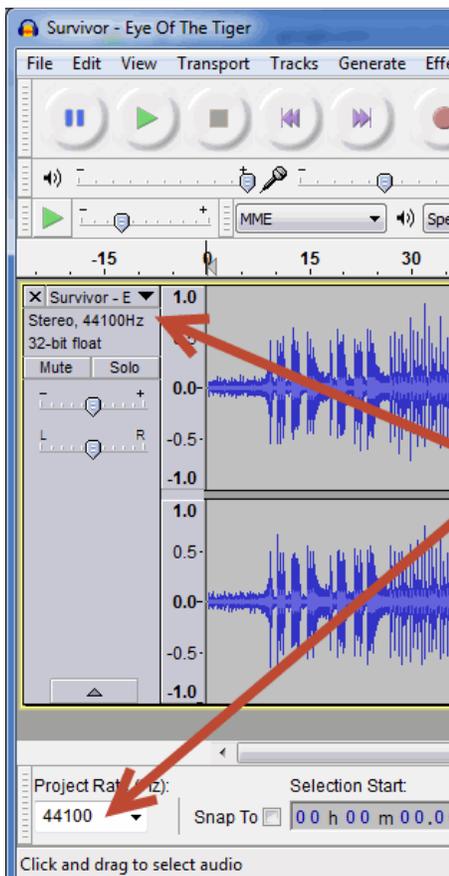
Appendix A - Prepare MP3 128kbs File

This sections shows you how to prepare an MP3 file to 128kbs.

1. Download and install Audacity on your PC from <http://audacity.sourceforge.net/>.
2. Launch Audacity and click File > Import > Audio. Select your audio file and import.
3. Once imported, you need to check two things to see if any changes are required.



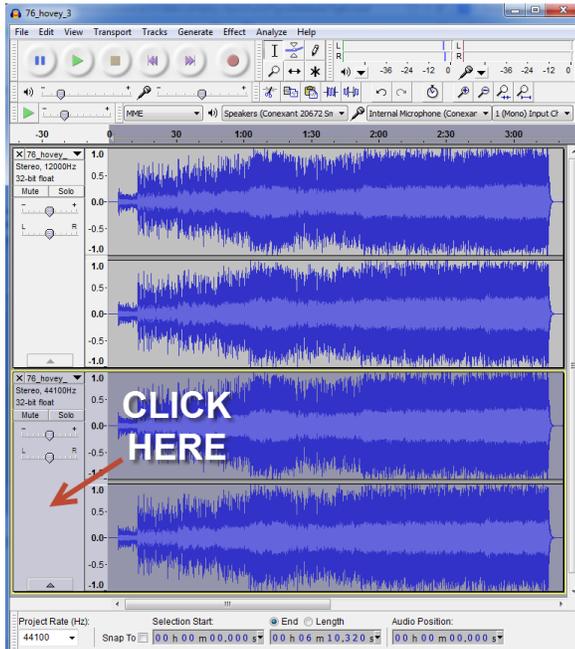
4. Once imported, check the values. If you see 44100Hz, everything is OK, please proceed to **Step 11** below.



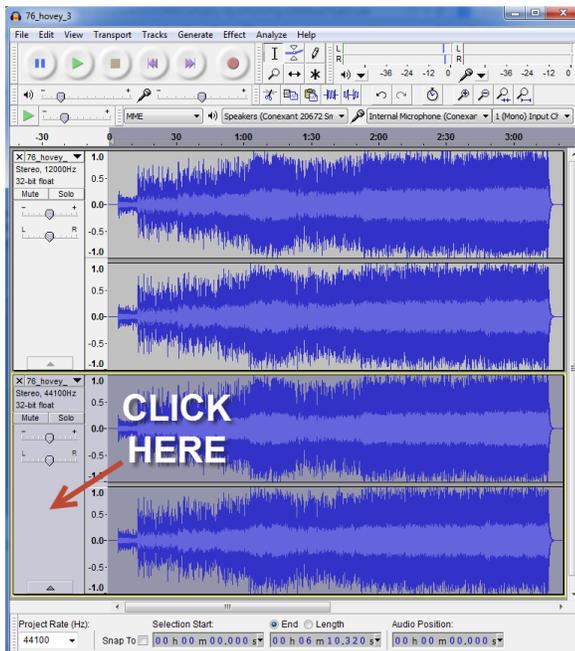
If both are
44100,
everything
is good.

No updates
required.

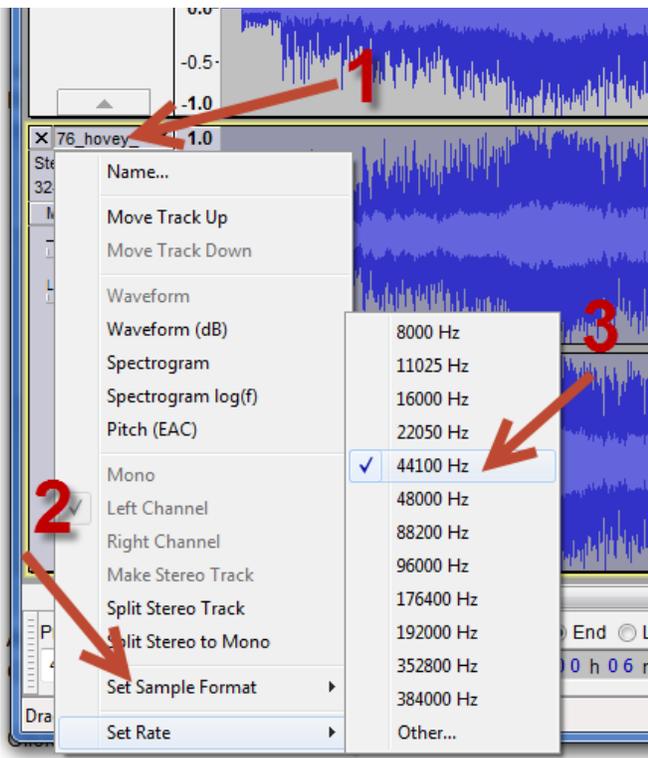
5. If the values show anything other than 44100Hz, you need to import the audio again click File > Import > Audio. Select your audio file and import. You will see two instances of the imported audio file as shown below.



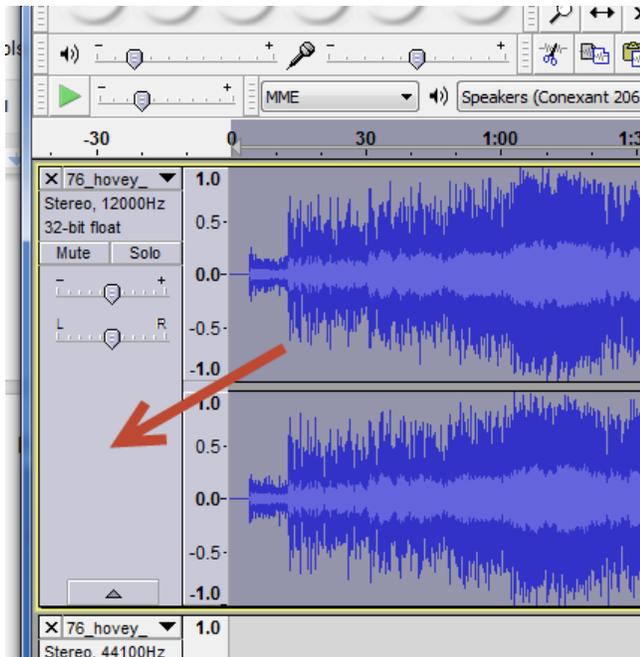
6. As shown above, click on the 2nd audio instance to highlight it. Then, click Edit > Remove Audio or Labels > Cut. This will remove the audio from the 2nd instance.



7. For the same 2nd instance, click on the 1, 2, and 3 arrows below to change the Rate to 44100Hz.

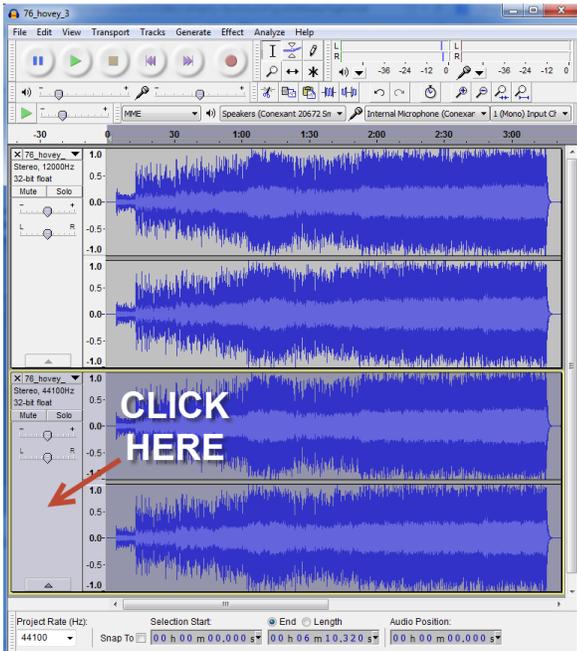


8. Click on the 1st instance to highlight the audio. Then, click Edit > Copy.

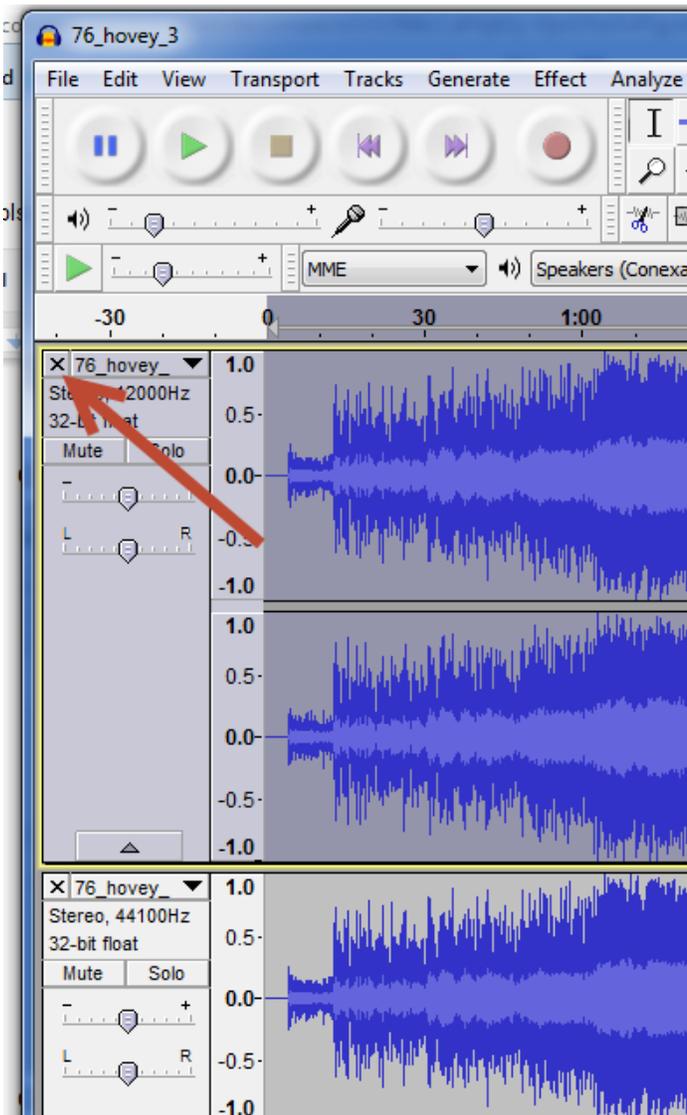


9. Click on the 2nd instance to highlight. Then, click Edit > Paste. The audio will copy to the 2nd instance. After

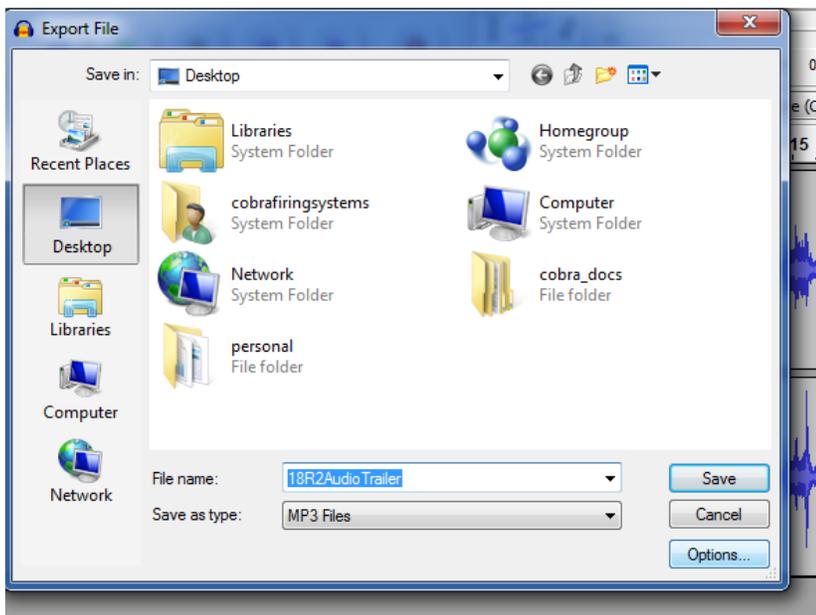
clicking Paste, you may need to wait a few seconds before the audio finishes copying.



10. Delete the 1st instance by clicking X as shown below.



11. Click File > Export. The following window will appear.



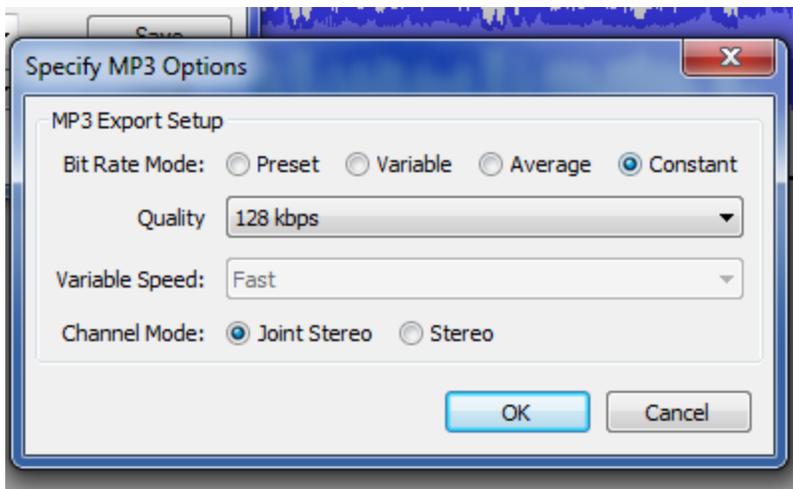
12. Click Options in the lower-right. Then, make sure the following are set:

Bit Rate Mode: **Constant**

Quality: **128 kbps**

Variable Speed: **Fast**

Channel Mode: **Joint Stereo**



13. Click OK. Then, save the file to your USB drive with the filename audiobox.mp3. You only need to type “audiobox” without the quotes into the filename. You do not need to add “.mp3”.

IMPORTANT!

Always perform a full dry run of your audio file on the audio box WITH the 18R2 running the script and audio. The MP3 may sound good when using the AUDIO TEST button on the audio box, but may sound different when the 18R2 is controlling the audio box with the time code.