

RetroSync Setup Guide

For version 1.0.0.5 10-22-17

After unpacking, please verify you have received the following items.



DC power supply and AC power cord as well as the USB cable.



RCA audio cable, 1/4" audio adapter and 1/8" audio adapter.

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Overview of Operation

At some point, you have no doubt tried recording audio from a regular sound projector and then syncing it up on your edit system. It is a tedious process which requires you to constantly resync the audio over and over and the reason is simple: The projector does not run at a constant speed nor is that speed the same as the playback rate of your film to digital transfer. But what if you could take the audio you transferred and magically make it play at a constant speed that was exactly the same as your film transfer? Then all you would need to do is line up the audio file to one visible sync reference anywhere in your video and the entire reel of film would be in sync from beginning to end. This is exactly how the RetroSync Studio Sound Module works.

Room lights can be on. Align the projector with the module as shown in the picture. The distance would be about 12-18 inches (1/3 - 1/2 meter) or closer. Alignment is not critical at all. As long as any part of the light from the projector hits the LogicSync sensor on the front of the module, it will work perfectly. Connect the audio output of the projector to the input of the module. Connect the USB cable from the module to your PC and you are ready to go. Start the projector and start recording on the RetroSync software.

While the audio is being recorded, the sensor keeps track of the shutter blade interruptions and passes this frame-by-frame information along to the software. The software logs this information next to the audio. After transfer, the software will then use this "time-map" to make tiny, frame-by-frame speed corrections on the audio to create a file that plays at a perfectly constant rate that matches your film to digital transfer. Just sync it on your edit system and you're done!

RetroSync Module Control Panel



Connect the provided 12 volt DC power supply to the power socket circled above. The AC power cord is standard for North America but can be changed to one appropriate for European standards. When the power switch is in the up (on) position, the green tally light will illuminate.



Connect the provided USB cable to the USB port circled above and then connect the other end of the USB cable to your PC running the RetroSync software. Any 64 bit Intel based PC running Windows 7,8 or 10 will work fine. CPU speed is not critical. When the unit is capturing film, the red led circled above will flash if alignment is adequate and the software settings are correct. Do not continue capturing and check alignment and settings if red light is not flashing.

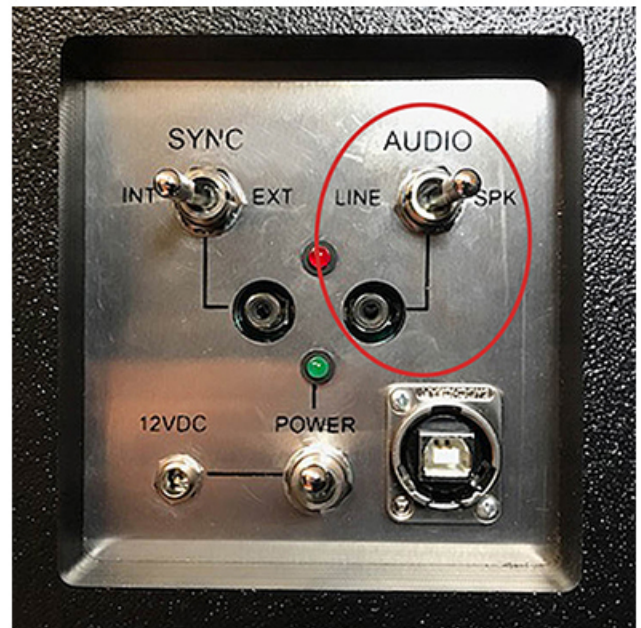
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There are two sync switch positions on the module: “Internal” and “External”.

The internal switch position is used when transferring film with a regular sound projector. In this position, the sync signal is created by the shutter blades interrupting the light that hits the sensor on the front of the module.

The external switch position is used when working with a sound projector that already has a once-per-frame pulse generator such as special Elmo or Beaulieu models or can be used with the RetroSync Field Sound Module in conjunction with Elmos or Eumigs that have a simple once-per-frame contact switch. In this instance, no projector lamp is required. Also, this can be used with vintage Bell and Howell “Filmo-sound” audio cassettes that have a once-per-frame sync pulse recorded along with the audio.



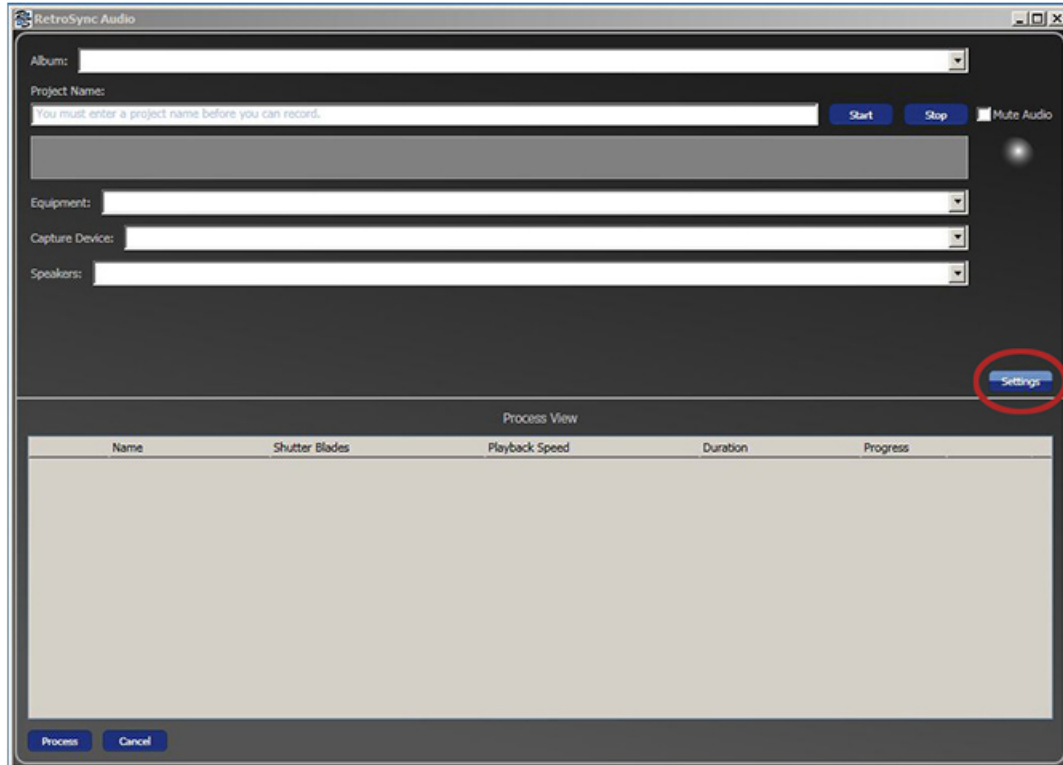
There are two audio switch positions on the module: “Line” and “Speaker”.

The line selection is when you connect to the line or earphone audio output of your projector. When using the earphone output, make sure the volume is not too high to prevent distortion. Use the RCA audio cable and (if needed) the 1/8” adaptor to plug into the line or earphone output of your projector.

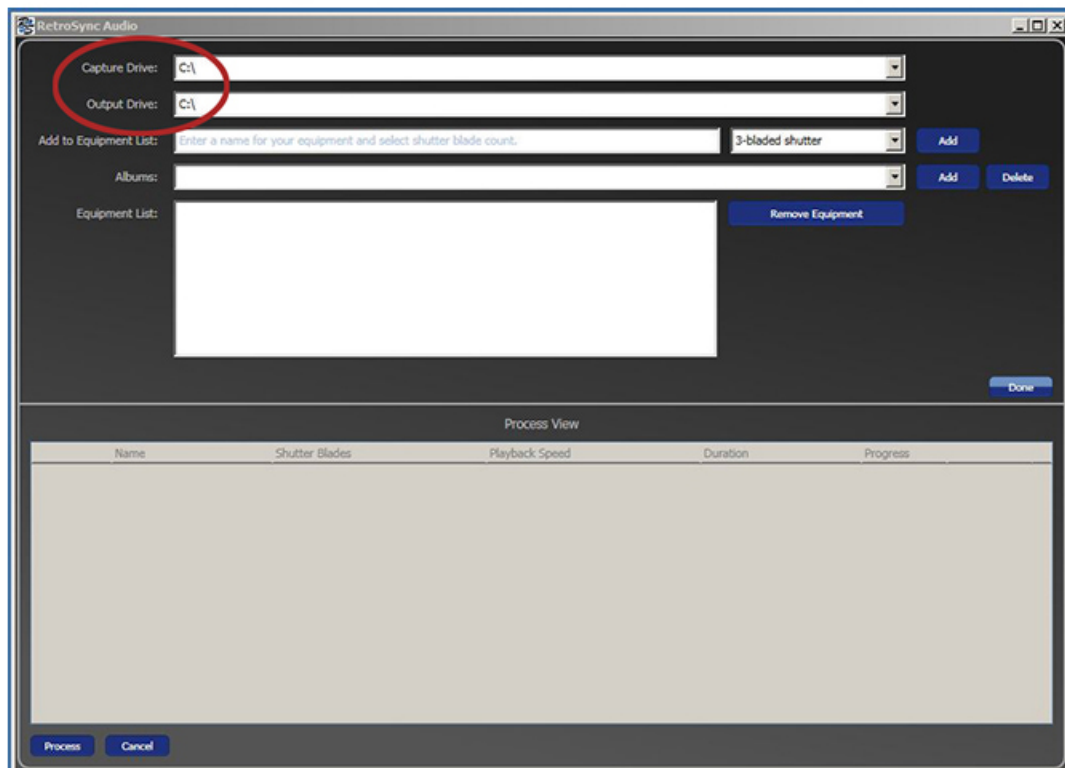
The speaker selection is used when your projector has no line or earphone output. If needed, use the 1/4” adaptor if the projector does not have an RCA speaker output.

NOTE: Since speakers are amplified, using the “line” switch position when connecting to a movie projector speaker output can cause distortion and possible damage to the module. Make your choice carefully.

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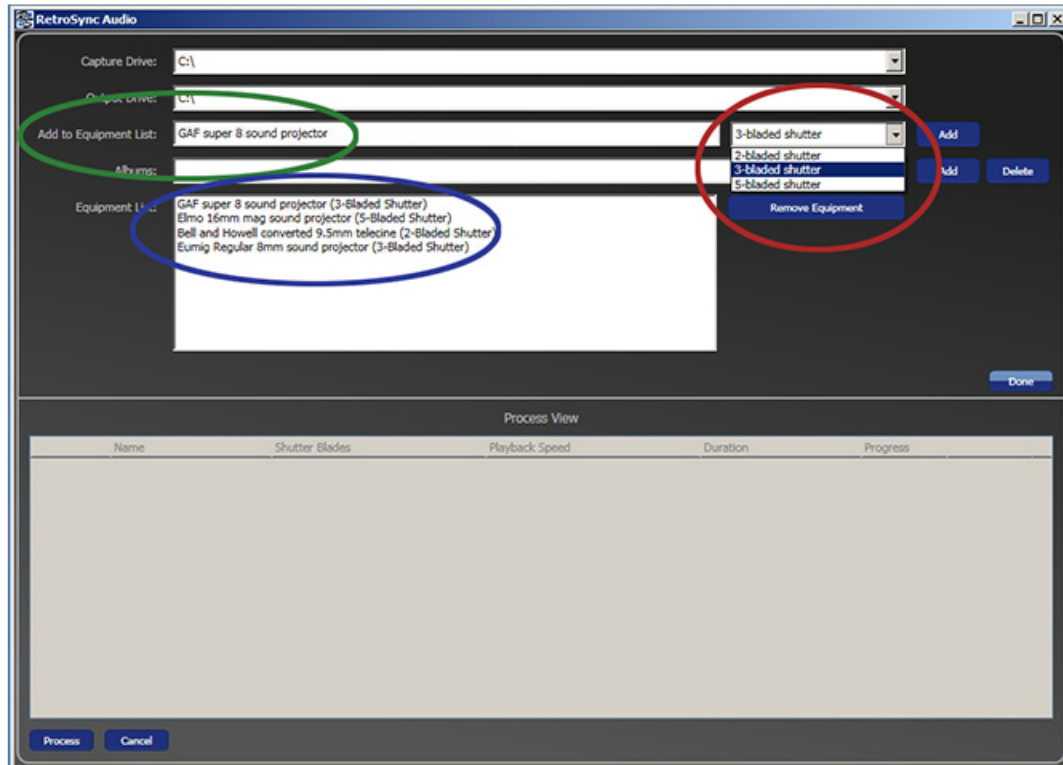


After launching the software, click on the “Settings” button.

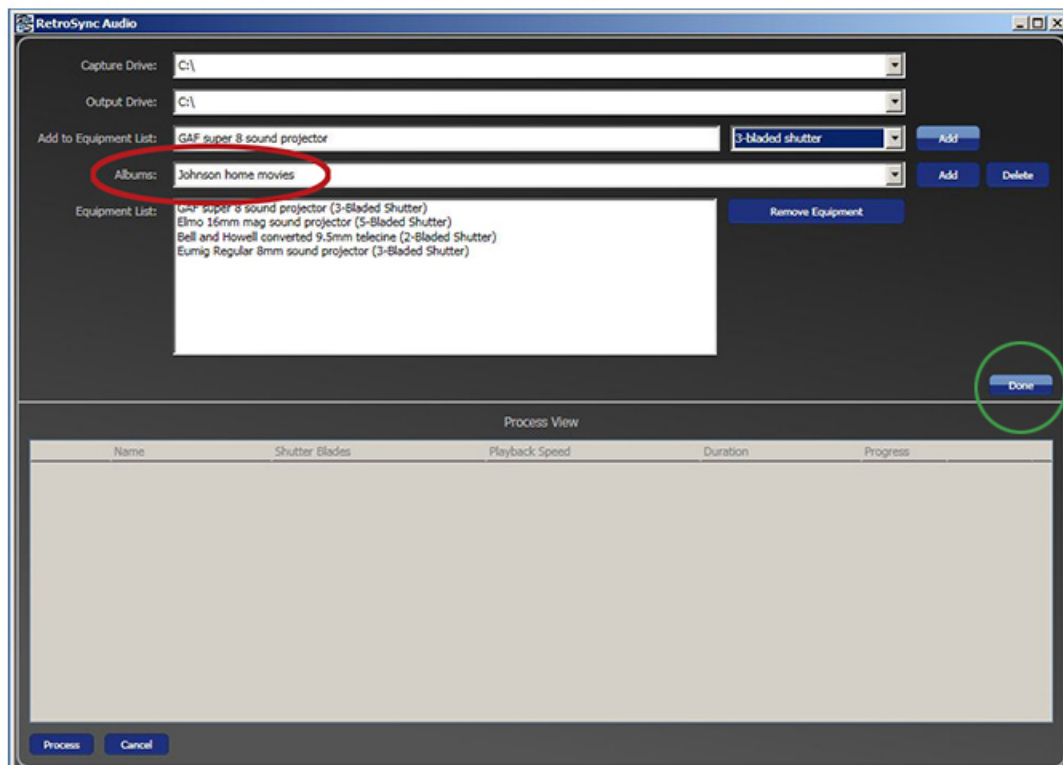


Use the drop down control to select where you want the capture and output folders. You should capture to an internal drive but you can export to external drives if desired. Just be sure that your external drive is plugged in and “seen” by your PC before launching the RetroSync software or the drive might not appear in the window. 5.

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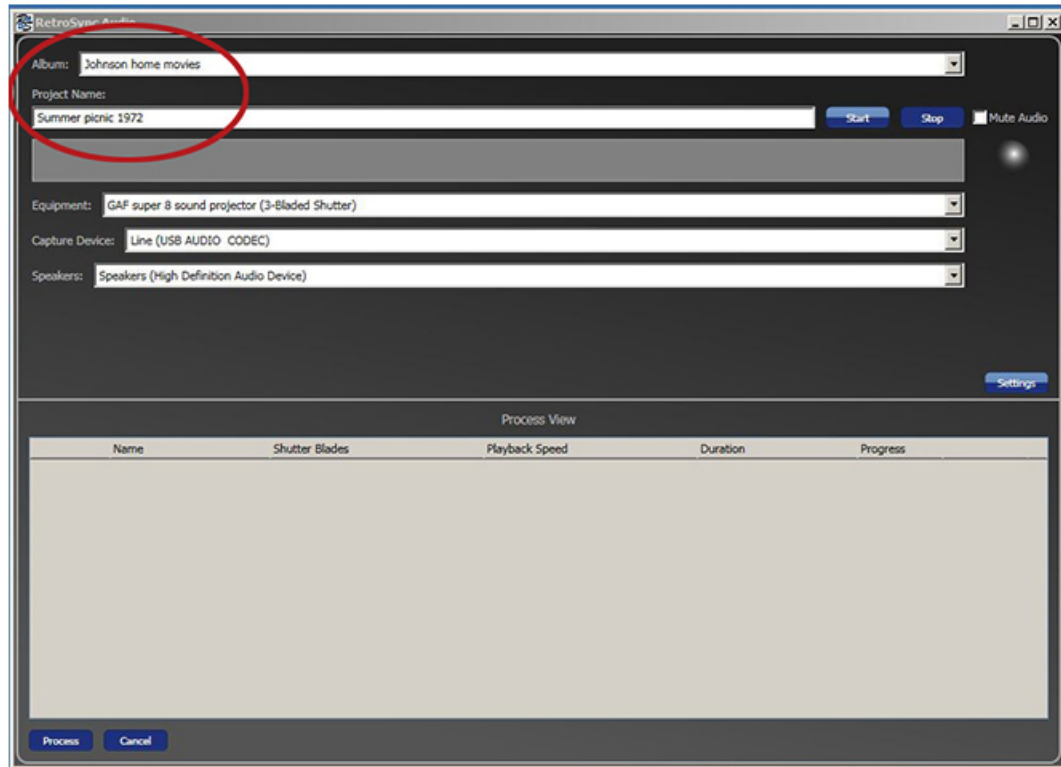


You have a choice of 2, 3 or 5 bladed projectors. The software defaults to 3 shutter blades (most common). Make your selection, write a **description** of the projector, and click “add”. Your projector(s) will appear **in the window** below. For equipment with once per frame switches or pulse generators, choose “External Sync”.

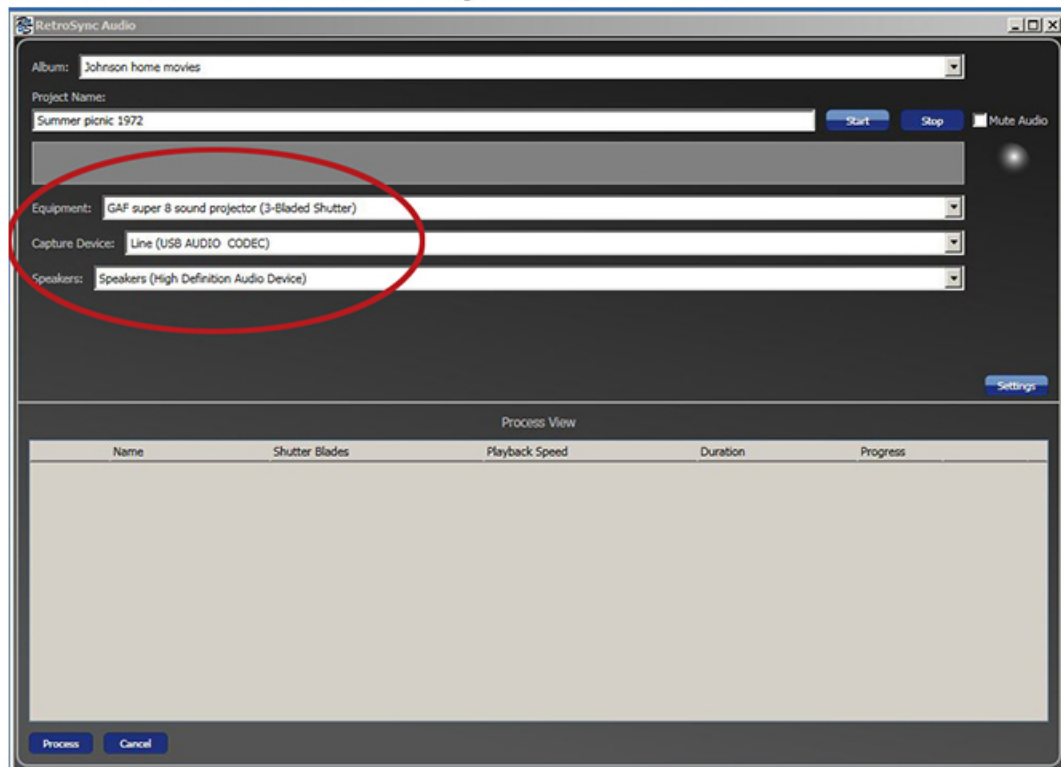


Create an album for your topic/customer and click “add”. You can add as many albums as needed to help keep files organized. Click “Done” when finished. 6.

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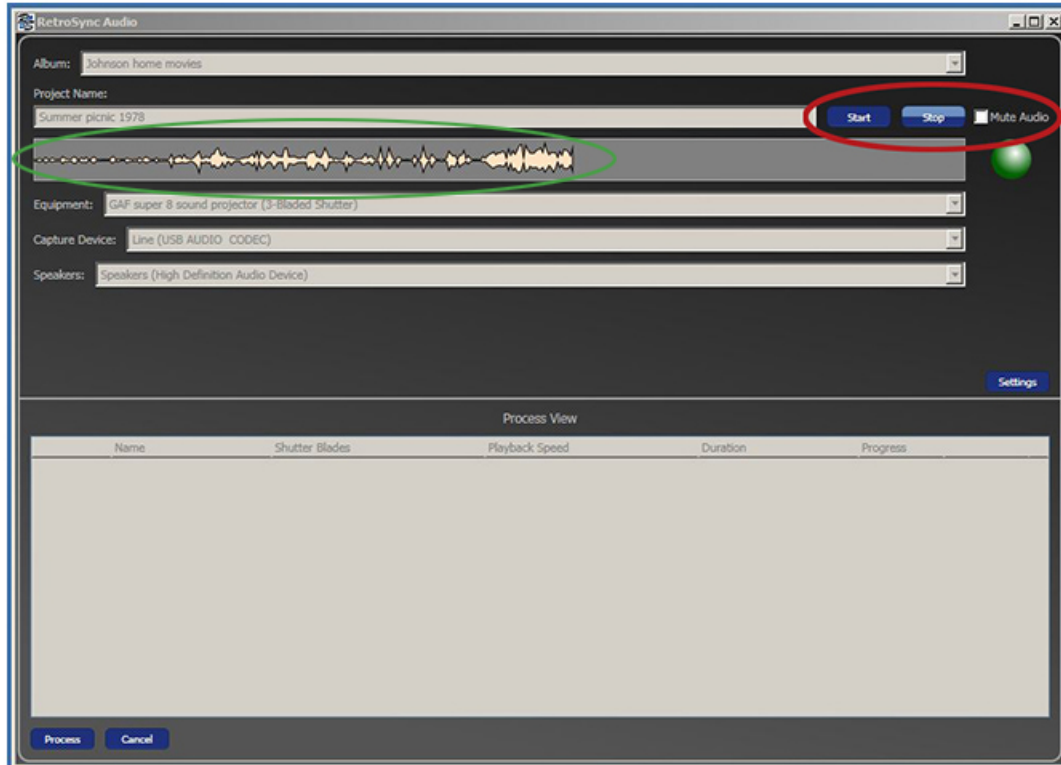


Use the drop down menu to select the album you want to record to. Give the file you are about to record a name in the “Project Name” field.

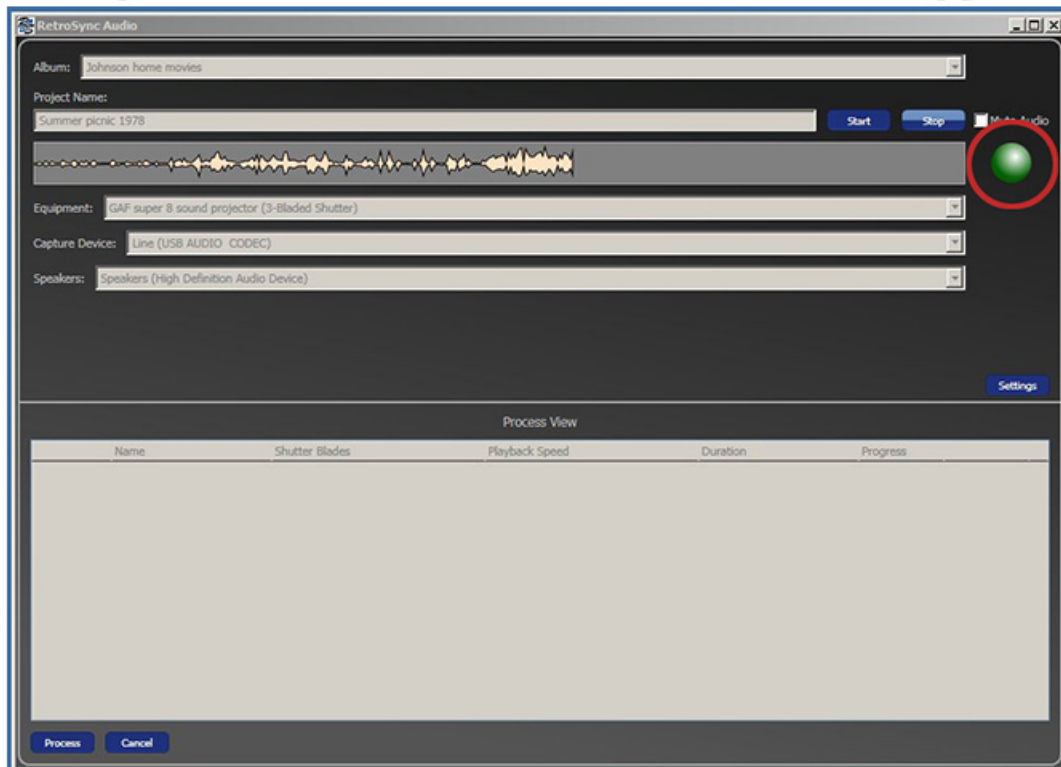


Use the drop down menu to select your projector. Use the drop down menu to select the capture device and speakers. You may need to experiment before you find the right combination of capture device and speakers to record and hear audio. The software will remember your selection so you only have to do this once.

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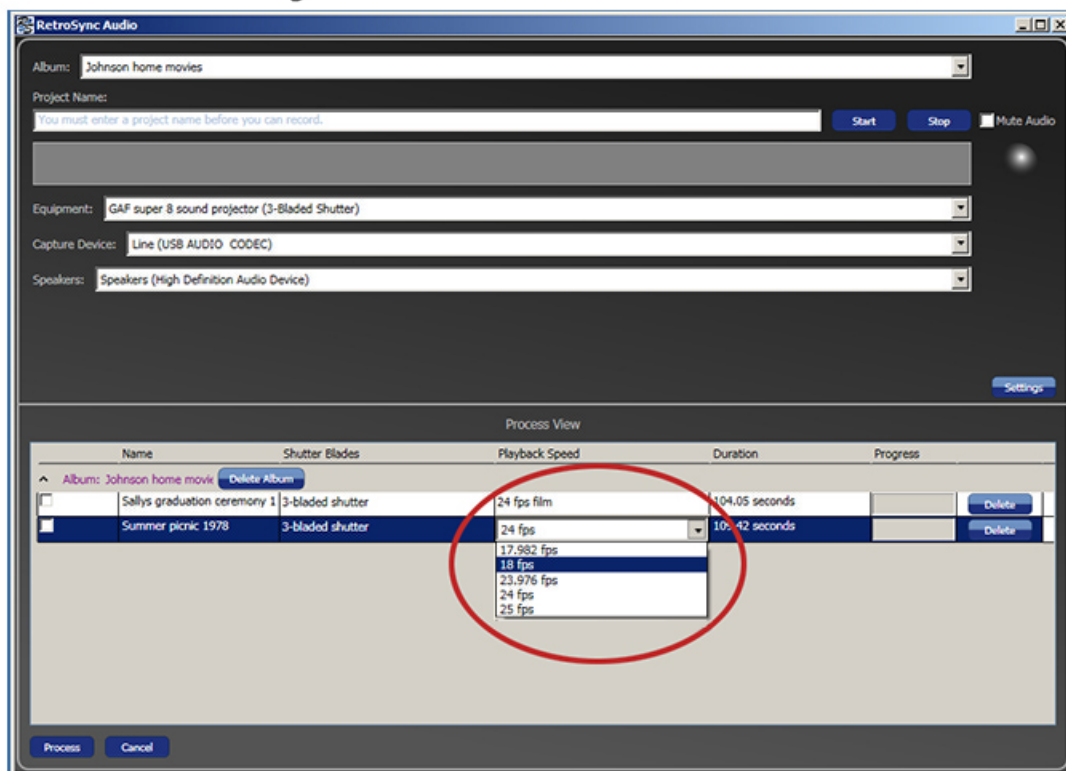


Start your projector running and then use the **“Start”** and **“Stop”** buttons to begin and end your recording session. An **audio wave form** should be seen moving across the screen. Checking the **“Mute Audio”** box will not affect the recording process.



The **green icon** will pulse on an off if the software is receiving sync pulses correctly. If the icon does not pulse, the software will not record anything. If this happens, check the alignment of the projector and your Capture Device settings.

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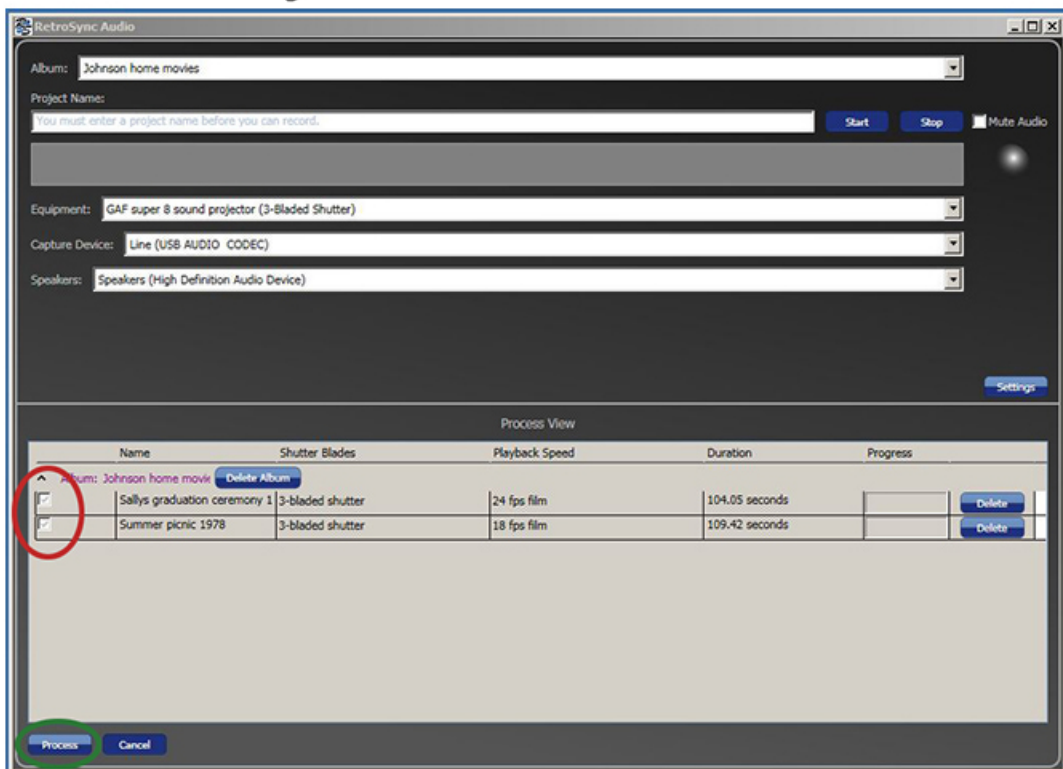
Once your recording is finished, it will appear in the project window below. Select the desired playback speeds, which are listed in frames per second (fps).

For high definition and standard definition NTSC (North America and Japan), please make note of the timebase of your edit program. If you are working in progressive high definition (30 or 24 fps), then you would choose 18 fps or 24 fps. But, if working in NTSC standard definition, then you would choose 17.982 fps or 23.976 fps. The reason is that 30 fps standard definition video actually runs at 29.97 fps, which is $-.1\%$ slower than 30 fps progressive high definition. So, in reality, 18 fps for NTSC is running at 17.982 fps and 24 fps for NTSC is running at 23.97 fps. In truth, both 17.982 fps and 18 fps would probably work for both SD or HD for short clips of about 50 feet or less. The same for 23.976 fps and 24 fps. But longer reels would require the precise selection of frame rates to maintain sync from beginning to end. So choose carefully.

For high definition and standard definition PAL (Europe and UK), the selection for playback at either 18fps or 25fps is pretty straight forward. Obviously, films originally produced at 24fps will sound slightly faster at 25fps. If available, it might be desirable to use a pitch change function in your computer edit system to bring the pitch back into normal range unless it isn't noticeable.

Please note that RetroSync records at sample rate of 44.1 kHz and can not be changed. This is pretty common in edit programs. However, if your edit program is set to anything different than this, your files will not hold sync.

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Once you have assigned the playback speeds to your files, **check the boxes** on the left for the files you wish to process. Then click the **“Process”** button in the bottom left hand corner. Once your files complete processing, you will then find all of them in the RetroSync Audio folder on the drive you designated for your processed files.

To sync your files, find a visible reference on your video file that corresponds to a sound in your audio file. Slide the audio file left and right on the timeline until sync is achieved. Spot check along the length of the file to make sure that it holds sync for the duration of the timeline. Splices or dropped frames can sometimes throw the sync off. When this happens, just use the razor tool to cut the audio file and slide it back into sync using a new reference. 16mm films typically have a “beep” as well as a sync frame at the 3 second mark of the countdown leader. This should make syncing your audio easier.

Useful Tip: Super 8 sound projectors have two speeds: 18 fps and 24 fps. RetroSync does not care if you capture your 18 fps films at 24 fps to save time. When you process your files, RetroSync will bring the audio back to the correct rate of 18 fps, if that’s what you choose in the drop down menu. Likewise, if you accidentally record a 24 fps file at 18 fps, or if your projector speed selection suddenly malfunctions, just record at whatever speed your projector will run at. RetroSync will still produce a correct file at the speed you selected. And, finally, if your projector has a bit of “WOW” due to mechanical wear, RetroSync will correct that, too!