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Simple DVD Synchronizing

There are a number of different ways to create DVDs to use with the Dave Jones Design DVDplay series of synchronizers, but there is one method that we suggest people use if they want to have a simple process for creating and synchronizing their DVDs. Our earlier tutorial “Authoring for Synchronizers” covers a number of different structures that your discs can be created with, such as placing content in titles, chapters, or between specific frames. All of these structures work with our synchronizers, but most of them require the synchronizers to be programmed to match the layout of the DVDs.

In this tutorial we will lay out the simplest method to use, and the one that does not require any reprogramming of the synchronizer.

Introduction

The DVDplay synchronizers are capable of starting each channel on a title number, a chapter number, or a frame number, and they can end playback when reaching a different title number, a different chapter (within the same title), or a different frame number (again, within the same title). The start and end points can be any of the choices, so you can start, for example, at a chapter and end at a frame. For more details, see our tutorial called “Authoring for Synchronizers”.

In most cases a simple structure is best, where the end user does not have to program the synchronizer to match the discs.

Think Simple

The DVDplay series synchronizers ship preset to play all channels starting at title 1, chapter 1, and play until they reach chapter 2. For most situations you can make your discs to match this format and then not have to program the synchronizer. The most important thing to remember when creating this format is that in order for the synchronizer to end at chapter 2, you must actually have a chapter 2 on your discs. If you don't have a chapter 2, the discs will not work with our default programming.

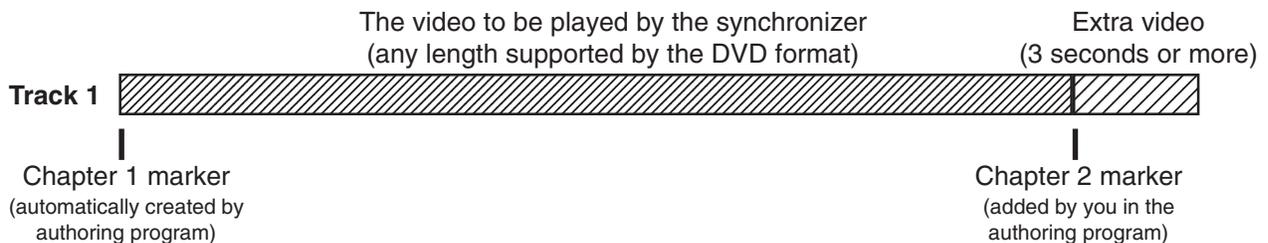
Another advantage of using chapter markers is that the synchronizer does not care how long the video is. It can play a 2 minute piece or a 2 hour piece, and the synchronizer doesn't see any difference. It is only looking for those chapter marks. You can replace the set of discs in the future without having to exactly match the duration to the original set.

Structure

The structure of the discs is quite simple, and is the same for all discs that you make. You will make a separate disc for each channel of video, and each disc will have its video on title 1 (track 1 on some authoring programs). The video will start right at the beginning of the track, at frame 1. You do not need any extra black or leader on the disc. What you do need is some extra black (or actually any video) at the end, past the section of video that gets played. In the authoring program you mark this extra video as chapter 2. It never actually gets played by the synchronizer. It is simply a marker that marks the end of the content to be played.

The content to be played is in chapter 1. It can be any length that DVD supports. The extra material after chapter 1, in chapter 2, must be at least one second long, but we suggest it be at least 3 seconds or longer. Anything shorter might cause problems with the Pioneer players used by the synchronizers. It would not be a problem if it was 10 seconds, or even 10 minutes. It never actually plays. This extra video should be added to each of your video clips in your video editing software.

There are some additional restrictions in creating your discs, which are mentioned below, and in the summary, but the key part of this disc structure is to add a few seconds to the end of your video clip in your video editing software, and then to add a chapter marker for chapter 2 in your authoring program between the main content and that extra content.



Beyond Structure

There are some additional restrictions when making your discs, beyond the basic structure defined above. They are fairly simple and should not pose any problems.

All DVDs must have an audio track. It can be silent, but the audio file must exist. Some authoring programs create this automatically, others require you to place the track yourself. The Pioneer players can not be accurately synchronized without the audio track existing.

Title and chapter searches must not be disabled. Most authoring programs automatically enable title and chapter searches, but the DVD format does allow authors to disable them, so be sure your authoring program does not disable these by default.

No authoring features placed within the main content. Do not add pauses, menus, loops, jumps, or any other DVD authoring “tricks” to chapter 1 or the start of chapter 2. It is OK to place a jump or loopback at the very end of the track, as long as it is at least one second past the chapter 2 marker.

Summary

- Each disc contains the video for one channel
- The video is on title 1 (track 1)
- Video to be played starts at frame 1 (which is chapter 1 by default)
- Add an extra 3 seconds (or more) of black or other video after the segment to play (do it in your video editing program)
- Add a chapter marker (chapter 2) between the main video and the 3 seconds of black (do it in the authoring program)
- Add an audio track, even if it is silent
- No authoring menus, jumps, loops, etc.. within chapter 1 or the start of chapter 2
- Make sure title and chapter searches are not disabled

Final Thoughts

A common question is “what about first play”. The answer is “don’t worry about it”. The synchronizer does not care if there is a first play. It also doesn’t care if the first play is set to go to track 1 or to a menu, or even to a different track. The synchronizer completely ignores first play and simply takes over control of the disc and goes directly to title 1, no matter what you set first play to be.

If the length of the video you are playing is very short, we suggest that you edit several copies of it together in your video editing software to make the video clip for chapter 1 longer. It is not required, but every time the loop starts over there is a pause of several seconds for the players to go back to the start and cue up again. Plus the head mechanism of the player goes through more stress each time it starts over again. If, for example, your video is only 1 minute long, then maybe edit 30 copies of it, one after the other, in your editing software and then add the extra 3 seconds for chapter 2 after that. This way your chapter 1 video is now 30 minutes instead of one minute, and the players loop every 30 minutes instead of every minute. You still need the extra 3 (or more) seconds of video added after your main video to use as chapter 2.

It is critical that you edit the video so that frame 1 of each channel is exactly lined up with frame 1 on the other channels. The synchronizer will be starting all channels together with frame 1 happening at the same time on all channels. The simple method outlined in this tutorial does not allow the user to tweak the start points in the synchronizer to line up channels where the editing was not exactly matched. If your discs can not be edited exactly, and the synchronizer needs to be set to start at different frames on each channel, then this default method can not be used. In that case please see our tutorial called “Authoring for Synchronizers”. It outlines a number of different methods for synchronizing discs, but they will each require somebody to program the synchronizer to match the discs. The point of this simple method is to avoid having to program the synchronizer.

The duration of each channel does not have to match. In 99.9% of the cases the user does want them all to be the same length, but the synchronizer doesn't care, and it will not affect the accuracy of synchronizing. If any channels end sooner than other channels, those channels go back to the start and cue up, and then wait for the rest of the channels. Playback does not begin on any channel until all channels are cued and ready. So the synchronizer always synchronizes accurately, no matter how long each channel plays for.

If you are using Apple's DVD Studio Pro version 1.5, go into the project settings and in the Remote Control section, enable frame searches. This is the only version that we are aware of that disables this feature. While not critical, it is recommended that frame searches not be disabled, and DVD SP 1.5 does disable them by default. It is critical that title and chapter searches not be disabled, but even DVD SP 1.5 doesn't disable those by default.

If you have any questions, feel free to call Dave Jones Design at (607) 687-5740 or check our web site, at www.djdesign.com, for additional tutorials (click the Tutorial link on the top left of the home page)