

HOME STUDIO SURROUND SETUP

Surround sound is the Orphan Child of the audio engineers. Rather THAN look at space as a form of orchestration or composition, the engineers used the format to 'enhance' music composed and arranged for a stereo field. Coupled with a complete lack of support from any major recording companies the format of Surround was LIMITED to classical music (as ambience) and film (as sound design).

In my opinion, Surround can bring the 'wow' back into certain kinds of contemporary music.

Surround sound is a composers medium, a tool of composition, a way to 're-imagine' music in a holographic environment with enchanting results. You have to think differently about the nature of sound and its placement in an aural field. You have to compose from scratch in surround. As a result, live music is best **captured** in surround and digital music is best **composed** in surround. My efforts are leaning towards composing music in surround and recording and mixing 'live' music in either a constructed or ambient surround form.

As recently as 5 years ago, to create a surround mix, disc and conform to the various playback systems was cost preventative. With the embrace of Dolby 5.1 and Discrete surround formats, fully integrated home studio workstations, a plethora of software, free and for purchase, a composer/arranger/producer has the ability to create a fully functioning 5.1 Blu-ray or SD disc without causing massive financial outlays to processing companies.

HOME SURROUND GEAR

My current setup is (with general list price in parentheses):

Mac Pro Xeno dual quad (\$3900)
M-Audio FirePro 2626 (D-A converter) (\$800)
2 Samsung 23" LCD/Plasma monitors (\$800)
Canon AX-1 HD camcorder (\$3500)
Sony GV-HD700 HD Video VCR (\$1200)
Samsung Blu-Ray player (plays BD-R) (\$500)
Alesis TapeLink USB Cassette player/recorder (\$200)
5 Genelec 6010A Bi-Amped Speakers (\$1600)
Harmon Kardon AVR 354 Amp (\$800)
Lacie Blu-ray Disc Burner (\$400)

software:

Final Cut Pro (\$1200)
Logic Pro 7 (\$900)
Quicktime Pro (included in Logic/Final Cut bundle)
Toast 10 with Blu-Ray plug-in (\$130)
iTunes (included Mac OSX bundle)
Wave Burner (included in Logic/Final Cut bundle)
Compressor (included in Logic/Final Cut bundle)
Garage Band (included Mac OSX bundle)

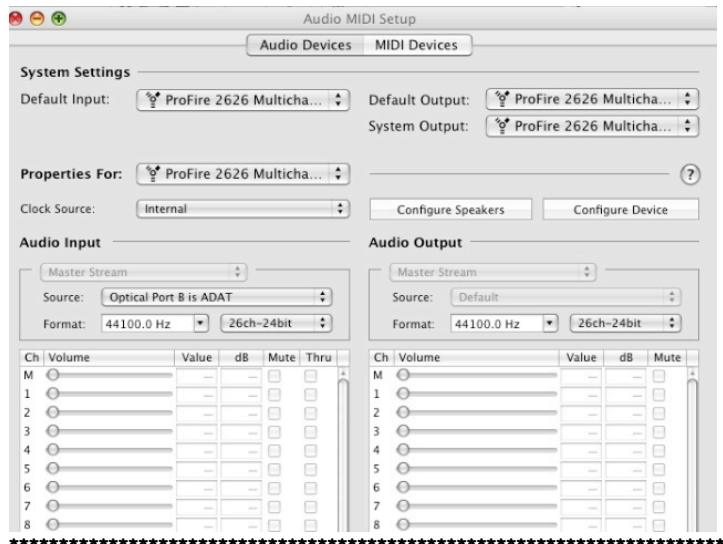
Handbrake (open source)
MPEG Streamclip (open source)
VLC (open source)

1-Creating the Desktop audio routing system

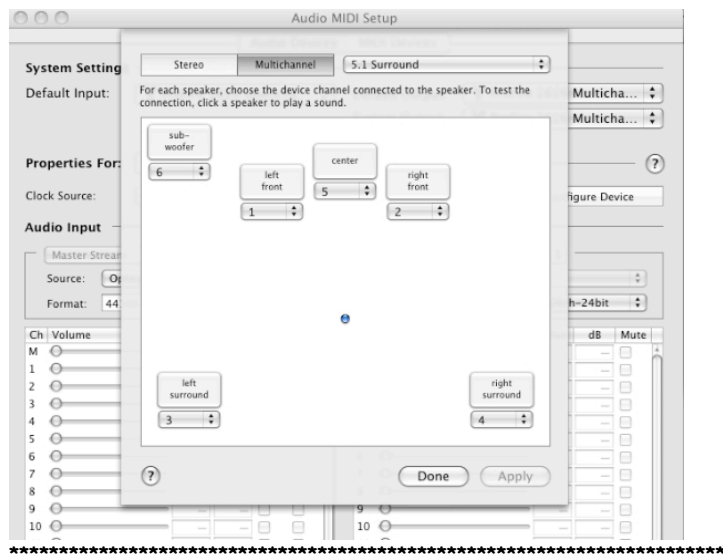
Go > Utilities > Audio Midi Setup

The Audio/Midi setup allows you to align YOUR digital audio outputs in sync (or conformed) to the standard stereo and surround channel assignments. (L-1, R-2, Lrs, 3, Rrs-4, C-5, LFE-6, Ls-7, Rs-8 (in 7.1 the hard left and right are considered surround left and right and the rear speakers are considered 'Rear Surround, or 'rs'. If you are using 5.1 make sure you default the surround left and right as the DVD player needs information both sets of surround or it defaults to stereo.

Once you configure your speakers to the digital outputs (and there is a monitor checking system in the software to configure device and speaker routing) then your computer now acts as a digital interface to the analog interface needed to power the speakers.



In the Audio MIDI window, hit Configure Speakers and this is what appears. Assign channels as to your Output device, which is in the same window as the Speaker setup. Depending on your router, the setup automatically re-configures and conforms all channels to a common assignment.



2-CREATING THE SURROUND MIX

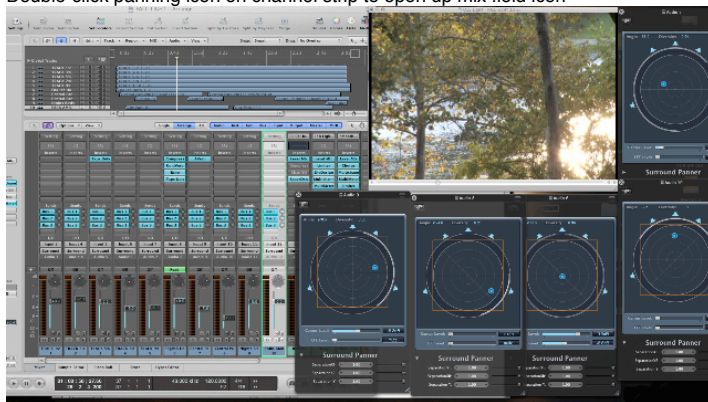
OPEN PROGRAM (I will default to Logic)



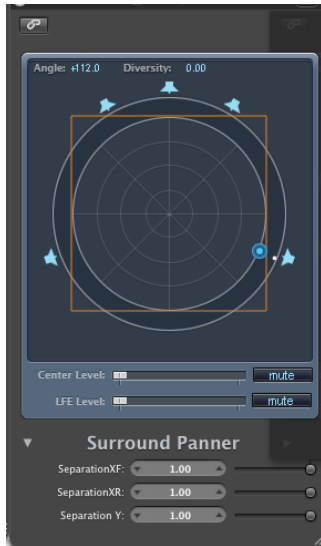
To create a surround mix one needs to open up a program in the MULTI-TRACK MODE. Once this is set up then you can mix in 5.1 or 7.1 (or beyond).



Add sound files to Arranger Window
 Double-click panning icon on channel strip to open up mix field icon

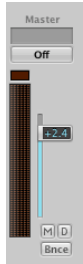


THIS IS THE SURROUND PANNER. THE BLUE ICON INDICATES SOUND PLACEMENT (in this case, hard right surround)

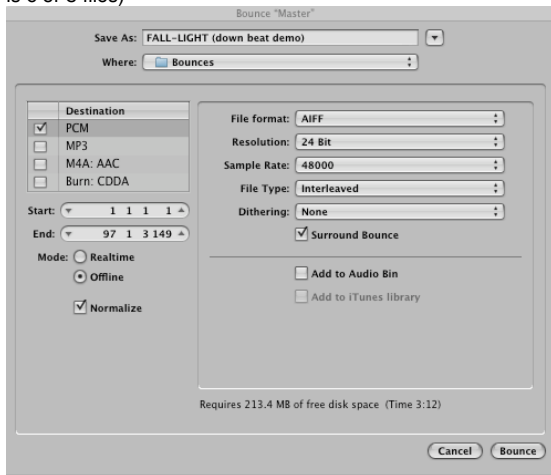


Create your mix

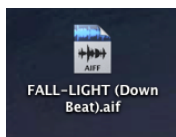
Bounce to AIFF interleaved 5.1 audio file



SET YOUR SAMPLE RATE AND SURROUND FILE DIRECTION (interleaved is one file and split is 6 or 8 files)



This is the resultant file icon (AIFF/48k)



THIS IS THE FILE INFORMATION

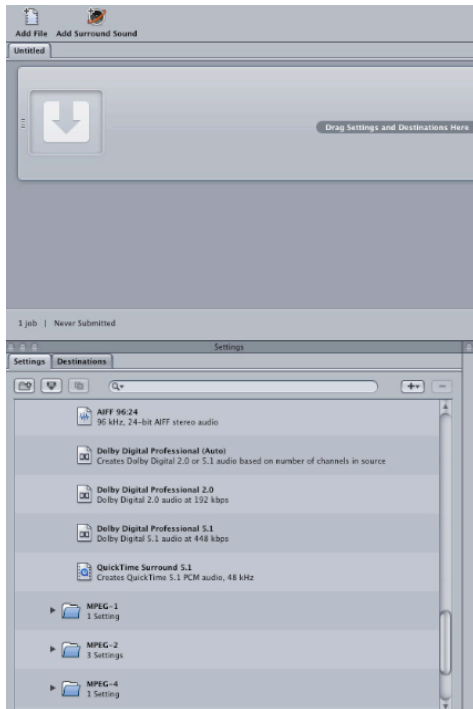


This AIFF file will perform in Quicktime Pro from the desktop without the use of a disc or player

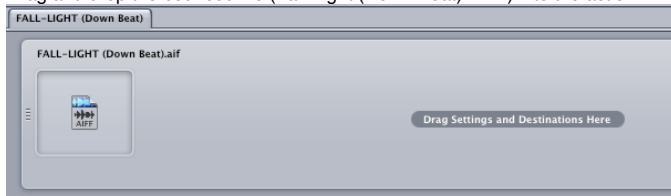
Translating the file to Dolby

Once the mix has been bounced (and the higher the audio resolution the larger the file) then the AIFF mix has to be translated into a Dolby encoded (interleaved) file that is compatible with all standard DVD players.

To create a Dolby 5.1 surround file, open the program Compressor (part of the Final Cut/Logic bundle). The window with the arrow is the action (or batch) window.



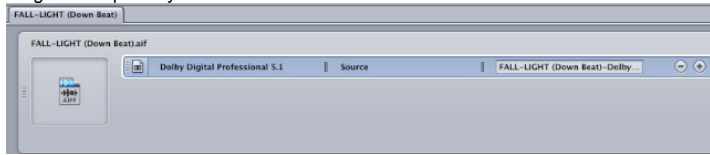
Drag and drop the bounced file (Fall-Light (Down Beat) AIFF) into the action window.



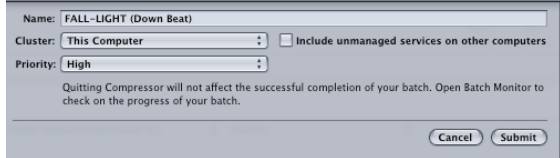
select Dolby Digital Professional 5.1 as the setting (the intended final file)



drag and drop Dolby icon into action window.



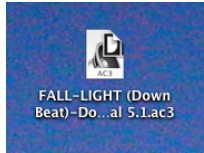
Submit AIFF file to Dolby encoding (make sure to keep the same file name thru the entire process)



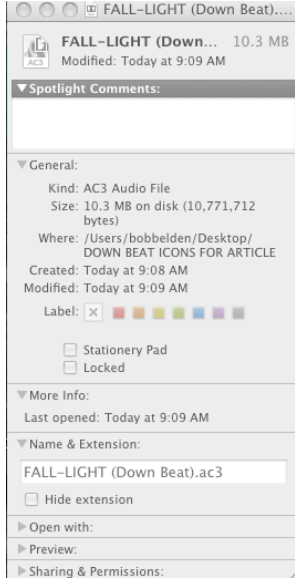
The progress window will let you know when the file has finished processing. Audio is much faster than video processing.



Your final file icon should look like this



THIS IS THE INFORMATION FROM THE FILE.



VLC plays back .ac3 (Dolby) files from the desktop. The channel playback is configured to the above standard mentioned earlier.

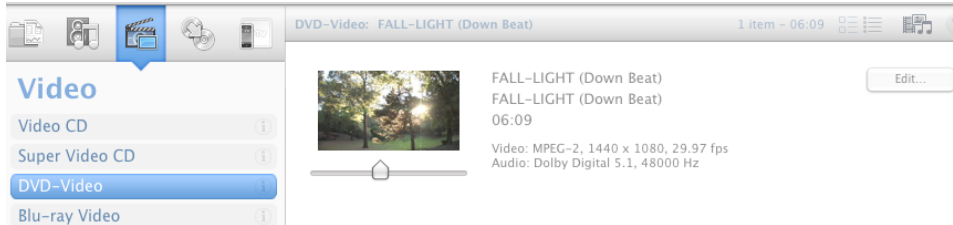
To create a file that will play back 5.1 in iTunes, one must create a video component. Using Compressor, follow the same instructions as to creating the audio Dolby 5.1 file but in video, the corresponding file is .m2v.

NOW TO CREATE THE DVD Disc Image file that will be used to create the 5.1 video files to play back in iTunes open up TOAST 10.

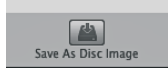
DROP the .m2v file into the Toast DVD window. If the extensions match exactly, the audio will automatically insert itself into the progra.



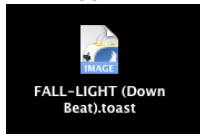
NOW THE TWO FILES HAVE MERGED IN THE TOAST WINDOW. The breakdown appears (Mpeg-2 and Dolby 5.1)
You can burn a DVD (SD or Blu-Ray) in this window or create a disc image. The disc image is what we will use to create the iPod 5.1 file.



SAVE AS DISC IMAGE



THE RESULTANT FILE ICON



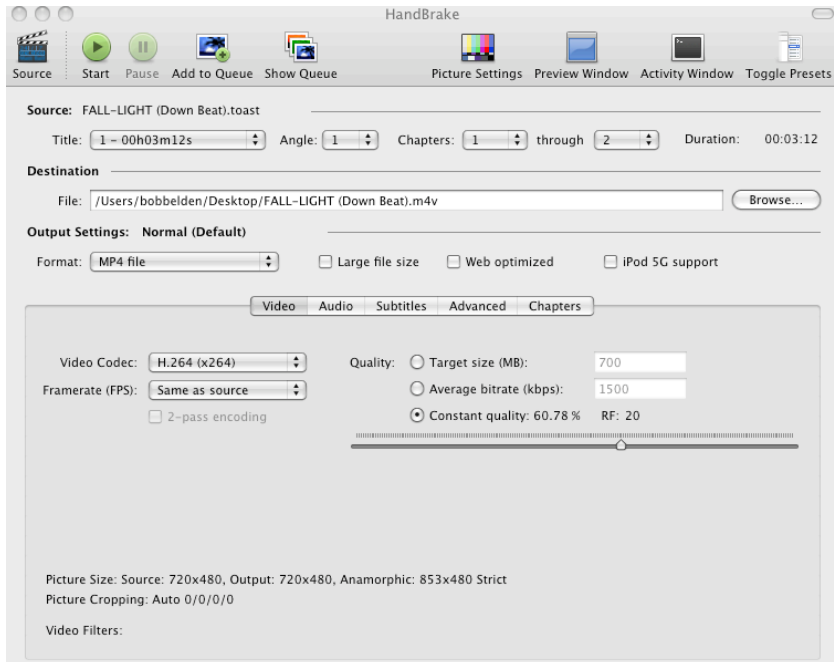
TO CREATE THE ACTUAL FILE THAT WILL PLAY BACK IN 5.1 IN iTUNES, DOWNLOAD HANDBRAKE (free software).

Handbrake

[\(http://handbrake.fr/\)](http://handbrake.fr/)

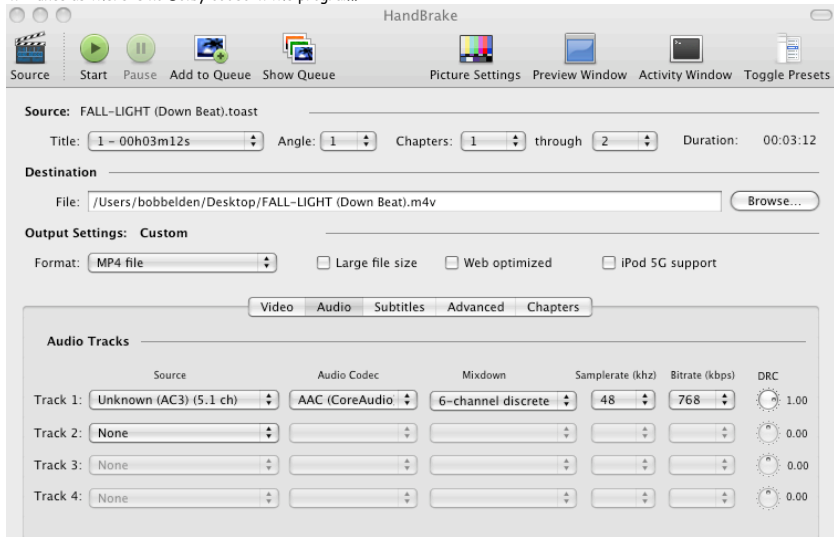
WHEN YOU OPEN UP HANDBRAKE, HIT THE SOURCE TAB AND IT WILL ASK YOU TO CHOOSE A FILE.
CHOOSE the .toast extension (Toast disc image). Handbrake will open a disc image as though it were
an actual disc.

This should come up. The setting should be H.264 (x264)

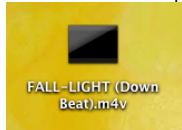


To get better quality video increase the Target Size (MB)

Then go to the Audio & Subtitles tab and open that up. You will see the source and audio codec on the left and the choice of mixdown options, stemming from Dolby to 6-Channel Discrete (as well as Stereo and Mono) You can adjust the sample rate as well. Hit start and the final result is a 5.1 .m4v iTunes movie file. Discrete 5.1 works in iTunes as there is no Dolby codec in the program.



THIS IS THE RESULTANT FILE. Drop into iTunes (which is synched via the Audio/Midi application to the 5.1 surround output assignments



It may seem a bit complicated but if you develop a pattern of production (or methodology) this process will become second nature. Since there is no instruction manual to facilitate this process my conception is the simplest A-Z production method that encompasses all formats to allow the performance of surround mixes.

BOB BELDEN

New York City
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