

Crap almost no one needs: a 7.1.4 to Atmos harness for Logic Pro

Forged from sheer insane determination, because it's definitely not something Logic is designed to do.



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DOWNLOAD IT!

[Logic Pro 7.1.4 to Atmos harness.zip](#)

(It's just a Logic Pro project. It won't explode your computer.)

WHAT'S IT *FOR* ALREADY? WHAT'S THE *USE CASE*?

Don't be so fucking impatient. The use case is that you can listen to Atmos tracks on Apple Music, or any other multichannel audio source, through the Dolby binauralizer in Logic, as an alternative to Apple Spatial Audio. This is easier said than done.

It's also handy if you want to adjust a track's individual 7.1.4 channel levels, e.g. boost or cut the center channel which often contains vocals, whether you are using Dolby Renderer, or Apple Renderer (Spatial Audio), or even a surround speaker room or soundbar setup.

That's it. C'est tout.

I'M VERBOSE, SO I THOUGHT YOU MIGHT WANT A TABLE OF CONTENTS

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with the download, well, you're just gonna have to scroll, what can I tell you.)

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🔴 ***YOU CAN ACTUALLY STOP READING HERE, IF YOU WANT!*** 🔴

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🔴 **OR YOU CAN STOP READING HERE! IT'S UP TO YOU!** 🔴

↓↓ *Everything below is extra detail, for the highly curious or procrastinatory.* ↓↓

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INTRO: WHAT IS THIS SHIT

This is an odyssey of Logic Pro spelunking: making it do multiple obscure, possibly unintended things; dealing with irritating design limitations; and working around one *really* annoying bug.

And it's also a manual for a tool I'm releasing that has the very sexy name *Logic Pro 7.1.4 to Atmos Harness*. Rolls right off the tongue!

This is going to be mainly of interest to a subset of people who work with Atmos in Logic, which is to say, a small group within a small group. (If you're in it, please say hi down below so I know it's not a group of only one.) Plus maybe those who like technical deep dives.

I'm not even sure it's *useful*, but who said things have to be useful?

YEAH BUT WHAT IS IT

It's a *harness*, if you will: a project with a bunch of *infrastructure* and *routing* and general *abuse* of Logic's features to make it *easy* to play 7.1.4 surround audio, such as Atmos music, in your headphones, via the *Dolby binaural renderer* in the Atmos plug-in.

Dolby Renderer offers a different 3D sound than Apple Spatial Audio, and offers customizable “space around your head” size.

- The 7.1.4 source audio can come from:

- a 12-channel WAV or AIFF file (with correct metadata to represent 7.1.4 channel ordering to Logic, such as what Surround Bounce produces)
- another app, via a multichannel virtual audio device like [BlackHole 16ch](#)
- a multichannel interface in real time

WHAT THIS AIN'T

This harness does *not* reconstruct an original Atmos source, nor could it. It just routes a 7.1.4 signal to the Atmos plug-in, primarily to hear the effect of the Dolby binaural renderer on that 7.1.4 signal.

You're not gonna hear the *same* result in your headphones as you will for the same Atmos track on TIDAL or Amazon Music; those create a Dolby binaural presentation from the *original project*, not from a 7.1.4 presentation like you are using in this harness.

But it's fun to compare both, and also to fuck around with the per-channel/object Near/Mid/Far settings in the Dolby Renderer for different "sound around your head" sizes.

I DON'T WANT TO READ A FUCKING BOOK CAN YOU JUST TELL ME HOW TO USE IT

Fine.

HOW TO PLAY APPLE MUSIC ATMOS, OR ANY MULTICHANNEL SOURCE, IN YOUR HEADPHONES, THROUGH THE DOLBY (OR APPLE) BINAURALIZER

This is gonna take a little while to do, though much of it is a one-time affair, and then you're good to go for the future. So, get a snack, breathe, and settle in.

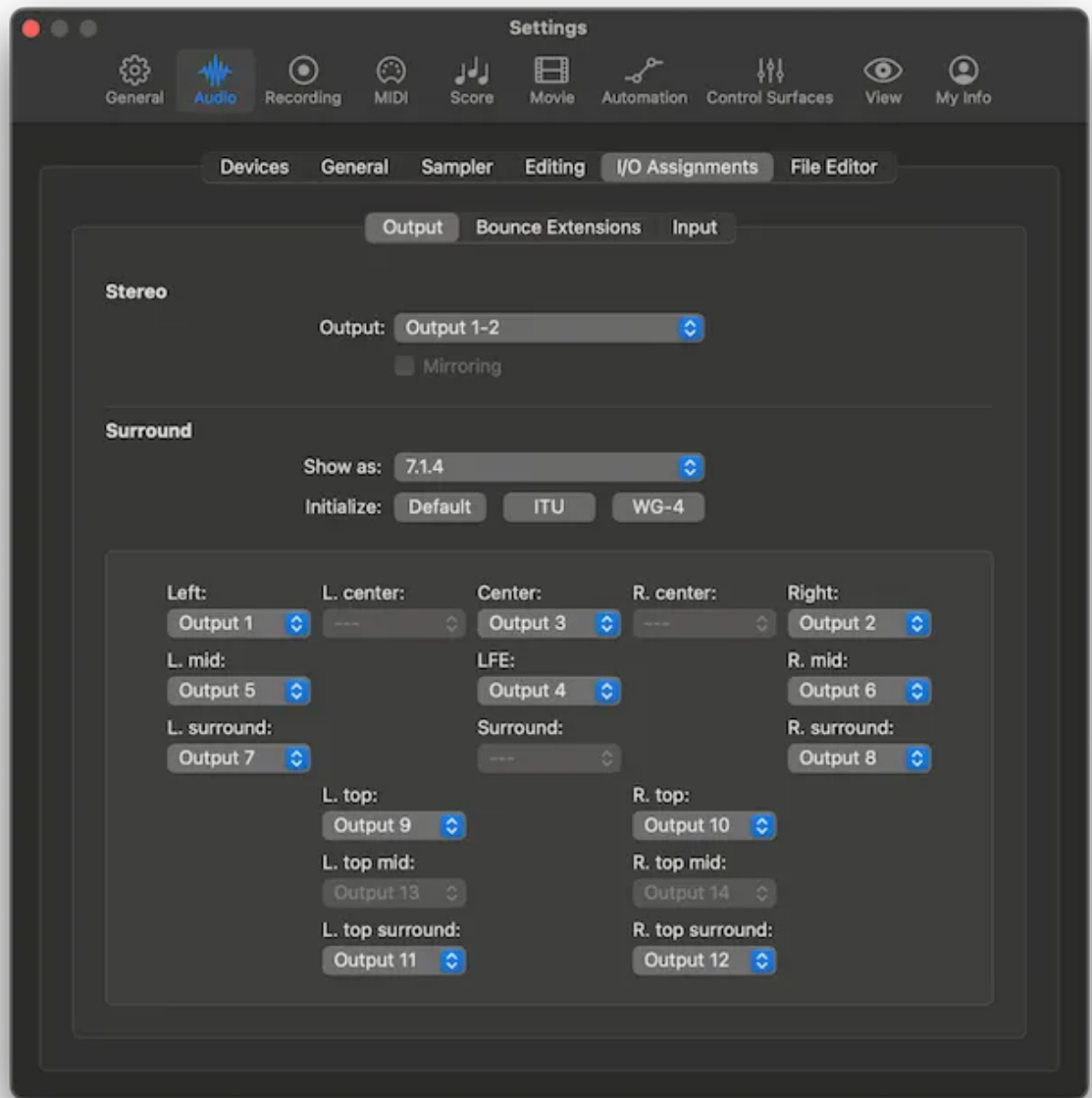
I put some **BIG BOLD TEXT** when you get to the point that you don't *have* to read any further if you ain't feeling it.

I've tested this harness on Logic 11.2.2, 12.2, and 12.3, and on macOS 15.7.x, 26.5, and 26.6. Because I'm exploiting various stuff I discovered in Logic that Apple doesn't document or specifically claim to work, I make no promises this harness will work on some future version. (When does anything? Everything breaks, eventually.)

ONE-TIME SETUP:

- Quit Logic Pro.
- Download [Logic Pro 7.1.4 to Atmos Harness.zip](#), and unzip it.
- Open *MatrixMultiplier-036.pkg*, which I've included, and let it install. (You can also [read about it and download it from here](#) if you like.)
- If you want to pipe in 7.1.4 audio from another app, like Music (rather than using an interface or a pre-existing multichannel audio file):
 - Get and install [BlackHole 16ch](#) (\$10, or, per the author, “do something extra nice for someone today” if you can't afford \$10).
 - BlackHole is an unbelievably useful utility that lets you send system audio (or app audio if it lets you select the output device) to any app's audio input. And either stereo or multichannel! Give that developer your money!
 - Choose BlackHole 16ch for system output, and turn it up to max.
 - Set the input level for BlackHole 16ch to max, either in:
 - /Applications/Utilities/Audio MIDI Setup → BlackHole 16ch → Input
 - System Settings → Sound → Input → BlackHole 16ch
 - (but if you do it there, don't leave it as the system input after you've set the input level)
- Open *Logic Pro 7.1.4 to Atmos Harness.logicx*.
- Click on File > Project Alternatives, and choose “7.1.4 to Atmos - mono objs”.
- In File > Project Settings > Audio, ensure the surround format is 7.1.4.

- Open Logic > Settings > Audio > I/O Assignments > Output.
 - Under Surround, set “Show As” to 7.1.4.
 - Ensure channels 5/6 are assigned to L.mid and R.mid, and 7/8 to L.surround and R.surround, like this:



- Confirm the others as well: 1/2:L-R, 3:C, 4:LFE, 9/10:Lt-Rt, 11/12:Lts-Rts.
- Click the Input tab, and ensure the same assignments.

- (These channel assignments are SMPTE standard for 7.1.4 speaker layouts; the “ITU” preset button incorrectly reverses 5/6 and 7/8.)
- If you’re bringing in audio from an app via BlackHole 16ch, then also:
 - Open Audio MIDI Setup (in /Applications/Utilities/).
 - In the left column, click BlackHole 16ch.
 - Click the Output tab, if present.
 - Confirm the Primary channel volume is at maximum, and unmuted.
 - Click Configure Speakers.
 - Set Configuration to 7.1.4.
 - At the bottom of the window, ensure all the speakers are assigned to channels 1 through 12 in sequence, like so:

Configure Speakers for "BlackHole 16ch"

Stereo Multichannel

Set the configuration that best matches your speaker layout and choose the channel to be used for each speaker. To test the assignment, click the test button for the speaker.

Configuration: 7.1.4
View:

Speaker	Channel	Test
Left	1	
Right	2	
Center	3	
Subwoofer	4	
Left surround	5	
Right surround	6	
Left rear surround	7	
Right rear surround	8	
Left top front	9	
Right top front	10	
Left top rear	11	
Right top rear	12	

Done Apply

- If Apply is clickable, meaning you needed to change something, click it.
- Click Done.
- Quit Audio MIDI Setup.

Great job! That's it for the one-time shit. You earned a break, soldier.

USING THE 7.1.4 TO ATMOS HARNESS

Ready to rock?

- Open *Logic Pro 7.1.4 to Atmos Harness.logicx*.
- Set Logic > Settings > Audio > Output Device to your headphones.
- Set Input Device based on what you're running through the harness:
 - If you're bringing in audio from an app like Music, choose "BlackHole 16ch".
 - If you're working with an existing 7.1.4 WAV or AIFF file (with correct channel order metadata), choose "None", and put the file on the first track, labeled "7.1.4 audio".
 - If you have a multichannel audio interface and want to use that as a source, select it, and ensure its channels match those in Logic Pro > Settings > Audio > I/O Assignments > Input.
- Open the Atmos plug-in on the Master Track, and double check that "Monitoring Format" is set to "Dolby Renderer".
- If you're playing an Atmos track from Apple Music via BlackHole 16ch:
 - Turn the Music volume slider to Max
 - Ensure Music → Settings → Playback → Spatial Audio → Dolby Atmos is set to "Automatic".
- Record-enable the "7.1.4 audio" track in Logic.
 - Play an Atmos track in Apple Music, or multichannel content from another app
 - Or, play multichannel audio through your interface, if you're using one.
 - Or, if you are instead playing back a file you added, just play back the file; you don't have to record-enable the track.

- Open the Level Meter on the “7.1.4 audio” strip to see all those channels coming in!
 - If you only see L and R, and you’re playing from Apple Music, make sure you’re playing a track that’s shown as offering Dolby Atmos, and that Atmos is set to “Automatic” in Settings.
 - Or, if you’re playing back a file you put into the project, but getting only L and R, make sure it’s multichannel; QuickTime Player can tell you that in its inspector, and so can the excellent tool [MediaInfo](#).
 - (As of August 2026, TIDAL and Amazon Music don’t offer Atmos on desktop operating systems, and Spotify, dicks that they are, don’t offer Atmos at all. And neither does YouTube or YouTube Music or anyone else. I mean, to be entirely fair to them, these companies don’t have nearly enough money. Anyway, long story short is if you want Atmos 7.1.4 played into Logic via BlackHole 16ch, you gotta play it from Apple Music.)
- Put on your cans, and hear all those channels magically transmuted into two-channel binaural headphone audio by the Dolby Renderer.
 - Optional: Say, “that’s neat.”

That’s it! Easy fucking peasy, amirite?

————— **ALERT** —————

You can stop reading here! I swear! The next section is optional!

OPTIONAL BUT USEFUL STUFF TO TRY, OR KNOW ABOUT

Set the Near/Mid/Far binaural render modes in Dolby Renderer

- Screw around with the renderer’s Near/Mid/Far settings (what Dolby calls binaural render modes) for each speaker under the “3D Objects” section, for a larger or smaller sensation of the sound around your head.

- The “Surround Bed” section won’t do anything when using the “mono objs” method you selected earlier, or the “st&mono objs” alternative method, as there are no Atmos bed tracks except LFE.
- But the ear-level speakers in “Surround Bed” are used with the “top-only objs” alternative method.
- (I explain all three methods in nauseating depth below. If you don’t touch any of their panners or faders, all of them yield the same result, so just stick with “mono objs” if you like.)

Avoid engaging the hidden limiter in Dolby Renderer

- Dolby Renderer has an always-active, seemingly hidden limiter. If you want to avoid engaging it, do any one of these so that Master stays under -0.1 dB:
 - Insert a Multichannel Gain plug-in on “7.1.4 input”.
 - Lower the fader on “7.1.4 input”.
 - If you’re from the school of “don’t touch this aux plumbing,” and want to leave “7.1.4 input” at 0.0 dB, you can instead lower the fader on the “input trim” strip at the right edge of the mixer. (It’s a VCA fader for “7.1.4 input”.)
 - If you want “input trim” in the track view, control-click its name and choose Create Track from the menu that pops up.

Adjust individual 7.1.4 CHANNEL levels

- If you open the mixer, and unfold the “mono objs” stack, you’ll see an output strip for each individual 7.1.4 channel. If you think some song’s center channel is too loud, or not loud enough, just adjust the fader.
 - If you prefer to keep the eight corner speakers as four stereo pairs when making adjustments, try File → Project Alternatives and choose “7.1.4 to Atmos - st&mono objs”. (This method is explained in detail further down.)

Verify that your source signal reaches Atmos untainted

- You can verify that your source reaches the Atmos plug-in unaltered by changing the Monitoring Format in the Atmos plug-in to 7.1.4, opening the Level Meter below the Atmos plug-in, and comparing it against the Level Meter on “7.1.4 input”. If you have not adjusted gain (either with a plug-in, or by lowering a fader), they should match.

Send any 7.1.4 Surround track to Atmos via Bus 33

- There’s nothing magical about the “7.1.4 audio” track. You can send one or more of your own Surround tracks to Bus 33, Post Fader, and select No Output, and it will end up being processed by the Atmos plug-in.
 - Using a Post Fader send to Bus 33, rather than assigning Output to go there, avoids a bug in the Surround Balancer for height surround formats, where the signals on all non-LFE channels are altered when they should be passed through transparently. It might be inaudible, but *it’s wrong*. Mega-wrong.

Use Apple Renderer (aka Spatial Audio) instead of Dolby Renderer

- If you want to compare Dolby Renderer to Apple Spatial Audio, change “Monitoring Format” in the Atmos plug-in to “Apple Renderer”.
 - “Apple Renderer” is the binauralizer that Apple normally calls “Spatial Audio”.
 - You don’t get Near/Mid/Far controls with Apple Renderer.
 - Apple Renderer will sound different on macOS 15 or earlier than macOS 26 or later, even if you’re on the same version of Logic.
 - (I think, and [so does Reddit](#), that the 26 and later version sounds meaningfully better.)

Use the Spatial Audio Monitoring plug-in instead of the Atmos plug-in for Apple Renderer

- You don't even need this harness at all to binauralize 7.1.4 audio with Apple Renderer; you can get the same result in an empty project by sending the 7.1.4 signal through the Spatial Audio Monitoring plug-in, and following it with a Down Mixer [5.1→Stereo] plug-in. The Atmos plug-in doesn't even need to be present.
 - The Spatial Audio Monitoring plug-in, unlike the Atmos plug-in when set to use Apple Renderer, does not narrow the channel count; it just puts the binaural audio on L-R within 7.1.4, and leaves the other channels silent.
 - To narrow to stereo without invoking gain changes, insert a Down Mixer [5.1→Stereo] plug-in — see the “fun stuff” section below for how — after Spatial Audio Monitoring. Then set output to Stereo Output, not Surround.
 - (This avoids a bug in the Surround Balancer for height projects that wrongly alters the signal on non-LFE channels, including L-R.)
 - AirPods/Beats don't have any special hardware to make them capable of the binaural component of Spatial Audio. (They do offer, however, Head Tracking and Personalized Spatial Audio, both of which I find kind of crap.)
 - Spatial Audio Binauralization itself is provided by the operating system, and so, via the Spatial Audio Monitoring plug-in, you can use the Apple Spatial Audio Renderer with any headphones.

Dolby Renderer applied to 7.1.4 ain't the same as what you hear on TIDAL or Amazon Music

- Of possible interest, at least to me: Apple Renderer apparently (according to numerous posts on Dolby's support forums) converts object tracks into 7.1.4 before binauralizing them, and that's strongly suggested by my own tests.
- So, I believe what you hear with Apple Renderer (or Spatial Audio Monitoring) is the same thing, apart from possible gain differences, as what you get on Apple Music itself when listening on AirPods/Beats with Spatial Audio enabled.
- This is in contrast to Dolby Renderer; it will sound different in this harness compared with TIDAL or Amazon Music for the same track. You can't reconstruct

the original Dolby binaural presentation, because:

- The original project had 3D object tracks that Dolby Renderer apparently binauralizes directly into 3D perceptual space *without* going through a 7.1.4 phase first. (This is an informed guess based on my own testing, not something I've explicitly read, so take it with a grain of salt.)
- You can't know what the Near/Mid/Far binaural render modes were set to in the original project, and in any case those would have applied to the original object tracks, not 7.1.4 speakers-as-objects.
- You can't know exactly what additional processing TIDAL or Amazon Music may or may not have applied when they created a Dolby binaural version from the Atmos master delivery file (ADM BWF) they received.
- But, with this harness, *you're instead binauralizing the 7.1.4 speaker presentation of the mixed Atmos project, not the original objects*. Doesn't make it bad, and that's the approach Apple Renderer seems to take, but it does make *your* Dolby Renderer binaural version different than the *official* one on TIDAL or Amazon Music.
- Because Apple Renderer apparently converts object audio to 7.1.4 before binauralizing, several approaches produce the same binaural audio, as measured by Level Meter or a [bit activity visualizer](#), when you start with 12-channel 7.1.4 audio. These are all equivalent, according to my tests, anyway:
 - 7.1.4 → harness Bus 33 → ... → Atmos>Apple Renderer
 - 7.1.4 → harness Bus 33 → ... → Atmos>7.1.4 → Spatial Audio Monitoring
 - 7.1.4 → Spatial Audio Monitoring → Down Mixer [5.1→Stereo] → Stereo Output

ALERT

This next section is also optional! You don't have to keep reading if you don't want to!

FUN STUFF LOGIC CAN DO THAT APPLE DOESN'T TELL YOU ABOUT

I had to discover and use all kinds of weird Logic behaviors, not all of which I'm sure were intended, and many of which seem undocumented. Wanna hear about it? I thought so.

Object output in a 7.1.4 project is possible:

Enabling “Spatial Audio: Dolby Atmos” in project settings does the following:

- The Atmos plug-in appears on the Master Track.
- You can select 3D Object Panner as an output for Mono/Left/Right and Stereo tracks.
- The project format is changed to 7.1.2 if not already set to that, and any existing plug-ins that can receive 7.1.2 will be changed to that format.
- 7.1.4 (and other height surround formats) become unavailable.
- It becomes possible to “Export Project as Spatial Audio” in Dolby-native formats.

But: Turning Spatial Audio back off allows changing the format back to 7.1.4, and yet, the Atmos plug-in remains, and any tracks set to use the 3D Object Panner as output retain it, and can even be duplicated if you need additional object outputs! The only things you can't do are Export Project as Spatial Audio, or output using the 3D Object Panner if it isn't already there.

Just to drive the point home: *Even though Project Settings says Spatial Audio is off*, by starting with 7.1.2 and creating at least one object-output track for duplication as needed, and then switching back to 7.1.4, you can actually have a functional Atmos 7.1.4 project (as long as you weren't planning on using Ltm/Rtm bed tracks, or exporting the project in a Dolby-native format).

Gain changes occur during most channel count changes, but not all:

Logic has seemingly undocumented internal rules about what happens when the signal path changes channel count, and they usually involve gain changes, even when there's only a single channel with signal and the others are all silence.

The exceptions I have found, at least when the unwanted channels in the signal are already silent, are:

- any output (or send) to a “Left” or “Right” track; other channels are discarded
- 7.1/.x to 5.1 — non-5.1 channels get discarded; other channels pass unchanged
- 5.1 to stereo — non-stereo channels get discarded; L-R pass unchanged
- stereo to mono if Pan Law is set to 0 dB in Project Settings, but I’m not doing things this way

Importantly, 7.1/.x directly to stereo *does* undergo gain changes; going through 5.1 first prevents that.

Isolating channels 3 to 12 without gain changes can’t be done in-box:

Logic can isolate L or R on a mono track without gain changes by specifying the track type as “Left” or “Right”. But it doesn’t offer that for any other channels in a Surround signal.

The IEM Matrix Multiplier plug-in is designed to play arbitrary input channels on arbitrary output channels.

So, in this harness, I’m using Matrix Multiplier to play surround channel pairs, specified on buses 34-39, on L-R, with other channels muted. Each channel is individually isolated by sending to a “Left” or “Right” aux for mono, or kept as a channel pair by passing through the Down Mixer [5.1→Stereo] plug-in, and then sending the resulting stereo signal to a stereo aux. Gain remains unaltered.

You can sneak Down Mixer [5.1→Stereo] into a 7.1.2 or 7.1.4 project, and put it on any channel strip, not just Master:

(And not *only* Down Mixer: the methods below will work for any “foreign channel count” plug-in.)

Logic does not allow insertion of plug-ins that don’t explicitly accept the signal channel count.

Down Mixer can normally only be inserted on the Master Track, and does not accept surround formats with height channels. So it can't be easily added to a 7.1.2 or 7.1.4 project. But it *can be done!*

- You can set the Atmos plug-in to the 5.1 monitoring format, which changes the surround format of the Master Track to 5.1, allowing you to insert Down Mixer [5.1→Stereo], and then move it to whichever track you'd like it on. (Then you can change the Atmos plug-in back to the monitoring format you want.)
- You can create an empty 5.1 project, add Down Mixer [5.1→Stereo] to its Master track, copy Master's channel strip settings, then switch back to your real project, create a dummy audio track, and choose Paste Plug-Ins Only. Then move Down Mixer to the track you want it on. (You can even create a dummy project when needed and then close it once you have the Down Mixer in your real project.)

(As a bonus, because Down Mixer doesn't accept 7.1.2 or 7.1.4 as native input, it conveniently gets left alone when changing surround format between 7.1.2 and 7.1.4.)

Down Mixer [5.1→Stereo] is a single step to get 7.1.4 to stereo with no L-R gain changes (provided other channels are silent):

Down Mixer [5.1→Stereo] works because the 7.1.4 signal is forced into a 5.1 channel width upon arrival, and so Logic applies its rule for 7.1/.x to 5.1, which doesn't alter gain. And then, since Down Mixer's job is to change the channel count, the 5.1 to stereo rule is applied, and that also doesn't alter gain.

Functionally, Down Mixer [5.1→Stereo] is equivalent to going through a 5.1 passthrough plug-in followed by a stereo passthrough plug-in, such as a 5.1 Level Meter followed by a stereo Level Meter. I prefer Down Mixer [5.1→Stereo] because it's a single plug-in.

Down Mixer is needed when sending to a stereo aux track with Object output, because Surround tracks can't use the 3D Object Panner; and 7.1.4 directly to stereo yields a gain change.

So Down Mixer [5.1→Stereo] reduces 7.1.4 to stereo in a single step, which can then be sent to a track of type Left, Right, or Stereo, without gain alteration, and the 3D Object Panner may be selected for its output.

— ALERT —

Everything from here on is just more info! Nobody's making you read it!

SO WHAT'S ALL THE DRAMA ABOUT? WHAT'S SO *HARD* ABOUT THIS?

The central issue (but hardly the only one): *You can't easily run 7.1.4 surround audio through the Atmos plug-in, and thus the Dolby binaural renderer, because Logic, per Dolby's design, only supports 7.1.2 for bed tracks, not 7.1.4. The height corners must become objects.*

It's a load of bollocks, but that's how Dolby decided Atmos should be.

And that's not the *only* irritating issue that had to be worked around to accomplish what I wanted. (If some of this sounds redundant to "Fun Stuff" above, it's because I discovered the fun stuff while working around these obstacles.)

3D Object Panner ain't allowed on Surround channel strips

- To make this harness work, conceptually, I wanted to, at minimum, turn the four height channels into Atmos object audio, hard-panned to the four top corners. *But Logic won't allow the 3D Object Panner to appear on Surround strips.* So the height channels had to be isolated and sent to a Stereo or Mono/Left/Right aux strip for object output. Which was exceedingly hard to do because...

Logic usually enforces hidden signal gain rules on channel count changes

- Whenever the surround signal's channel count changes, e.g. from stereo to mono or from 7.1 to stereo or from anything to anything, Logic applies automatic, and seemingly undocumented, fold-down (or, in the other direction, upmix) rules, which *usually include gain changes* even when all but one channel in a surround signal are muted. And these rules can't be bypassed or overridden or even seen. Which became an issue because...

Logic allows you to isolate Left or Right without gain changes, but no other surround channels

- Logic has an annoying design limitation: You can simply designate a strip as type Left or Right to isolate either of those channels as a mono track *without any gain changes to that channel's signal*. Great! But you *can't* do that with any other channel in a surround signal. Only Left and Right. Every other fucking thing I tried yielded gain changes, because of the aforementioned automatic fold-down rules.

But there's a free plug-in that lets you put any channels on any channels...like L-R

- I eventually was able to isolate channels from the surround signal, without gain changes, with a free plug-in called IEM Matrix Multiplier (which I included with this harness) that can play any two surround channels on Left and Right, while silencing the rest. The signal can then be sent to a Left or Right aux strip for the mono 3D Object Panner, or it can be processed by the Down Mixer [5.1→Stereo] plug-in before being sent to a Stereo aux strip for the stereo 3D Object Panner. Huzzah. But I never did find an in-box way of isolating any channel other than Left or Right from a surround signal, and it wasn't for lack of trying.

I also ended up discovering and exploiting a bunch of crazy Logic behaviors that are decidedly off-grid, as I detailed above. That was fun shit.

AND, FFS, THERE'S A BAD BUG IN THE SURROUND BALANCER FOR HEIGHT-FORMAT PROJECTS!

As if all that shit weren't enough, Logic has a nasty bug: The Surround Balancer for height projects (and *only* height projects) changes the signal of every non-LFE channel that passes through it, even when all of its settings are zero/neutral/default.

I think this is because the "Elevation" field, when it shows 0.0°, is likely *close to* but not *actually* zero under the hood. Perhaps the signal alterations are inaudible, but unwanted signal alterations are also unacceptable on principle in a DAW!

So I had to figure out how to prevent the signal from ever passing through the Surround Balancer, except for LFE, which escapes unscathed. I used a send for the surround signal, Pre or Post Fader, rather than Output, and that did the trick.

(Yes, I've reported the bug to Apple. No, I am not holding my breath that it will be fixed any time soon.)

- The “top-only objs” method keeps the 7.1 channels as bed tracks. If it weren't for the bug, that should just be one track whose Surround Balancer mutes the height speakers. But the bug is there, so all the non-LFE channels would get altered. Sigh. So the 7.1 channels instead output as four channel pairs to avoid the Surround Balancer.
- For this method, Logic's output device must support at least 8 channels.
 - The easy thing to do is just use the “mono objs” or “st&mono objs” methods instead, which let you just output to headphones without issue, instead of using the “top-only objs” method.
 - But, if you *do* want to use the “top-only objs” method:
 - If you're not bringing in live input via BlackHole 16ch, then set Logic Pro > Settings > Audio to use BlackHole 16ch as the output device.
 - *But, if you are* using BlackHole 16ch for the input device, you can't also use it as an output device, or you'd get a feedback loop. So go get [BlackHole 64ch](#), execute the one-time setup steps above for it that you performed for BlackHole 16ch, and use BlackHole 64ch for Logic's output device.
 - If you want to monitor in headphones when output is set to BlackHole 64ch: open QuickTime Player; File > New Audio Recording (you won't actually be recording anything); set its volume to max in its window; click the triangle to the right of the record button; choose BlackHole 64ch for “Microphone”; choose your headphones as the output device from the system output menu, or Apple Menu > System Settings > Sound.
 - (BlackHole 64ch behaves exactly the same way as BlackHole 16ch, since 7.1.4 is only 12 channels anyway. But having both means you can use one BlackHole for input device, and another so that the “top-only

objs” method can output directly to channel pairs, rather than having to pass through the buggy Surround Balancer.)

So, yeah, Logic really fought me hard on this one, both in terms of bugs to be worked around, and design limitations to be overcome. But I prevailed. Curiosity might not be the mother of invention, but it’s her cousin, and once I want to know if something can be done, I *will not fucking rest* until either I’ve done it, or have concluded that it absolutely *can’t* be done.

This time, it could be done. And now I, and you as well, have an *extremely niche, obscure use case* tool. Your 7.1.4 audio can be run through the Dolby binaural renderer in the Atmos plug-in. You’re welcome?

I LOVE OVERKILL: THREE METHODS, SAME RESULT, EXPLAINED

This one gets a mini TOC reprise.

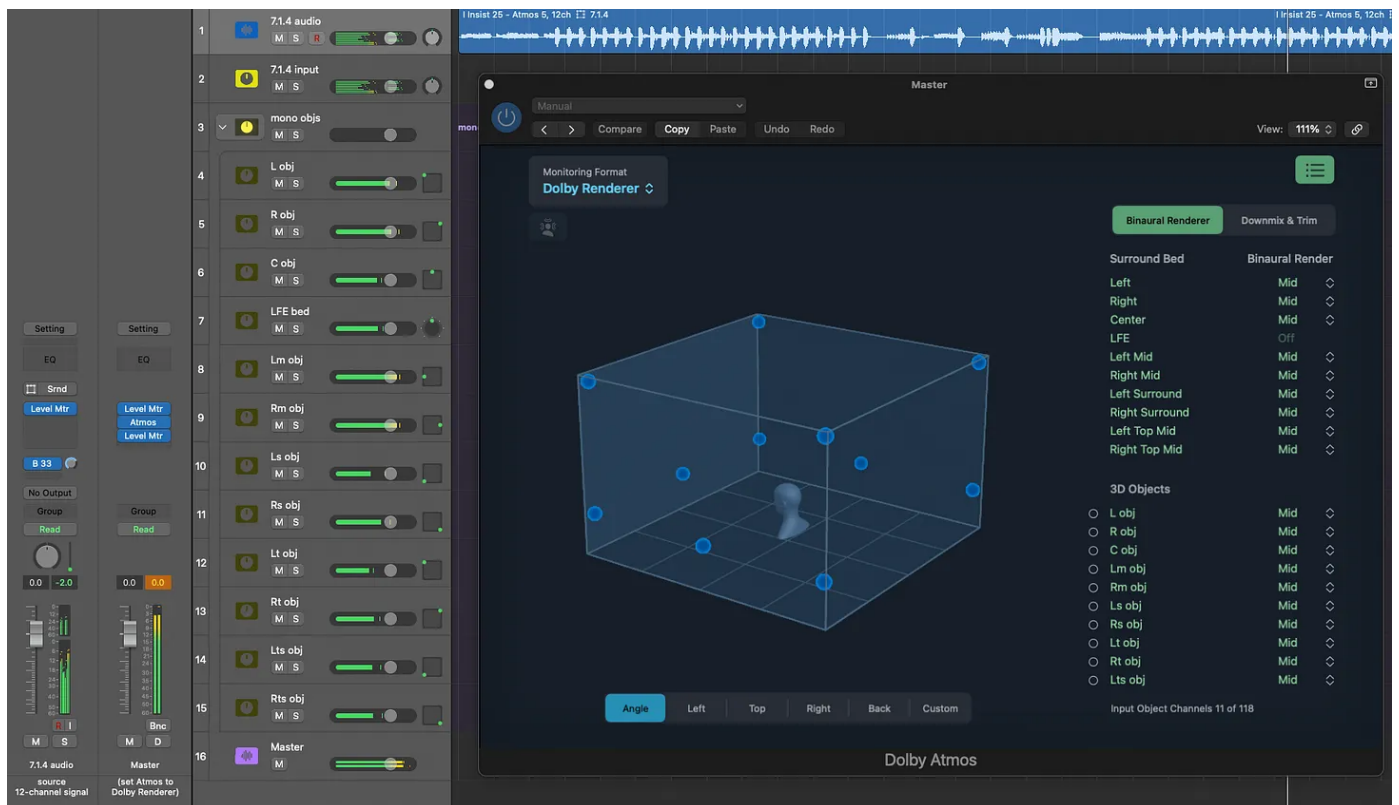
1. Method 1: Project Alternative “mono objects”
2. Method 2: Project Alternative “stereo & mono objects”
3. Method 3: Project Alternative “top-only objects”
4. Project Alternative “All Methods”

METHOD 1: PROJECT ALTERNATIVE “MONO OBJECTS”

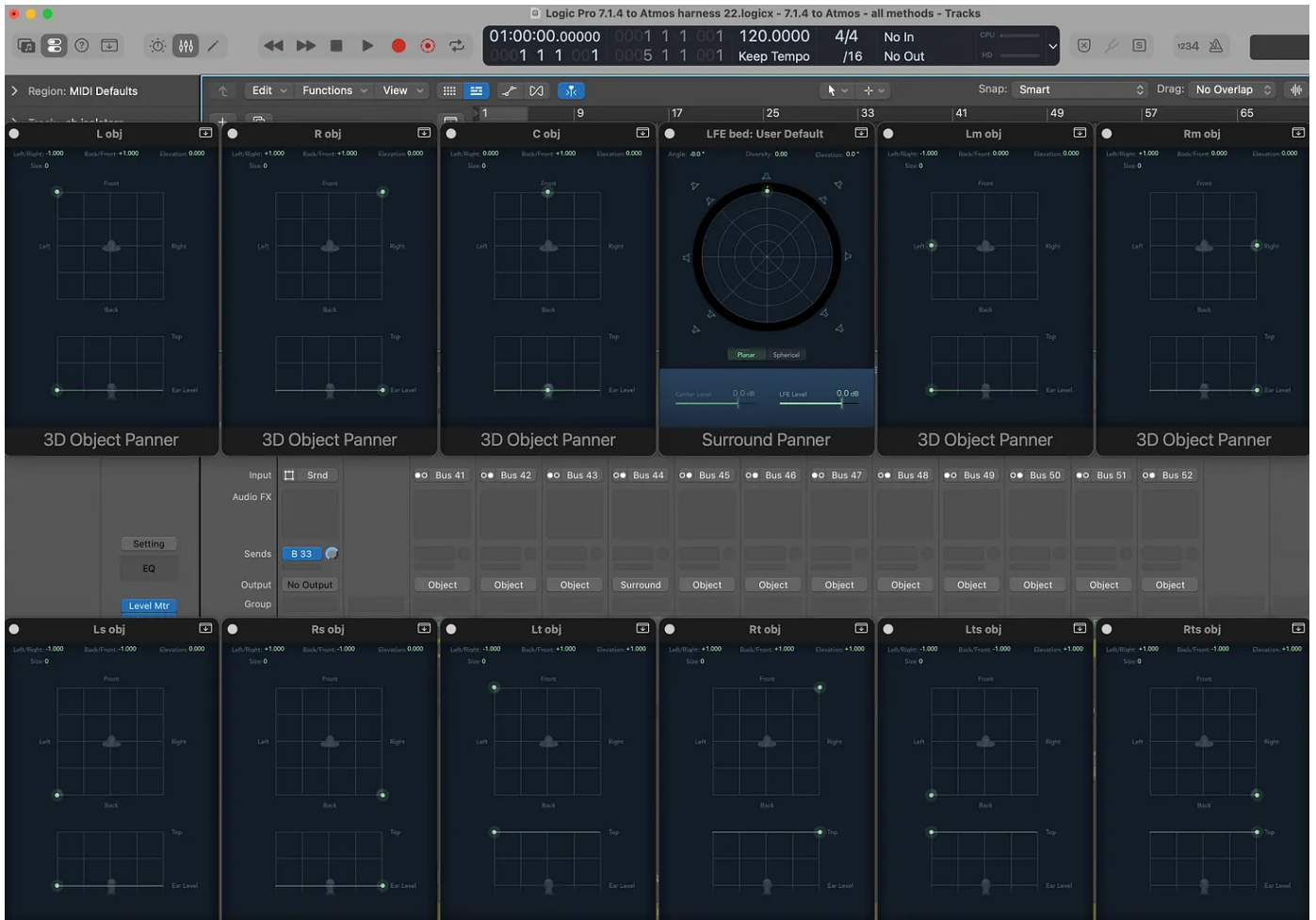
The Project Alternative called “mono objs”, which was selected in the “Using the 7.1.4 Harness” section above, is just one of *three* methods that do the same thing! Yes. It’s true. More specifically, “mono objs” is set up like so:

- All 11 non-LFE channels from the 7.1.4 are transformed into 11 individual mono aux tracks, each with output set to 3D Object Panner, positioned where the corresponding speaker goes.
 - The 3D Object Panner is connected by a secret underground sonic tunnel to the Atmos plug-in, and skips over anything on Master above Atmos.

- LFE is a bed track, as required by Atmos. (That is, it's a track with ordinary speaker panning, not 3D object positioning.) Its output is set to Surround, and the Surround Balancer has all non-LFE speakers muted.
- Based on my tests, no known modifications are made to the signal on any of the 12 channels as long as the 7.1.4 gain remains unchanged by faders, or a gain plug-in, or the trim fader. What shows up on Master when Atmos is set to 7.1.4 output matches the original 7.1.4 source when comparing level meters, or with a [bit analysis plug-in](#).
- Is a picture worth a thousand words? You tell me:



- And these are all the 3D Object Panners for each individual channel at its proper speaker position (LFE is required by Atmos to be a bed track, so it uses the Surround Panner with all the speakers muted and the LFE slider set to 0.0 dB).

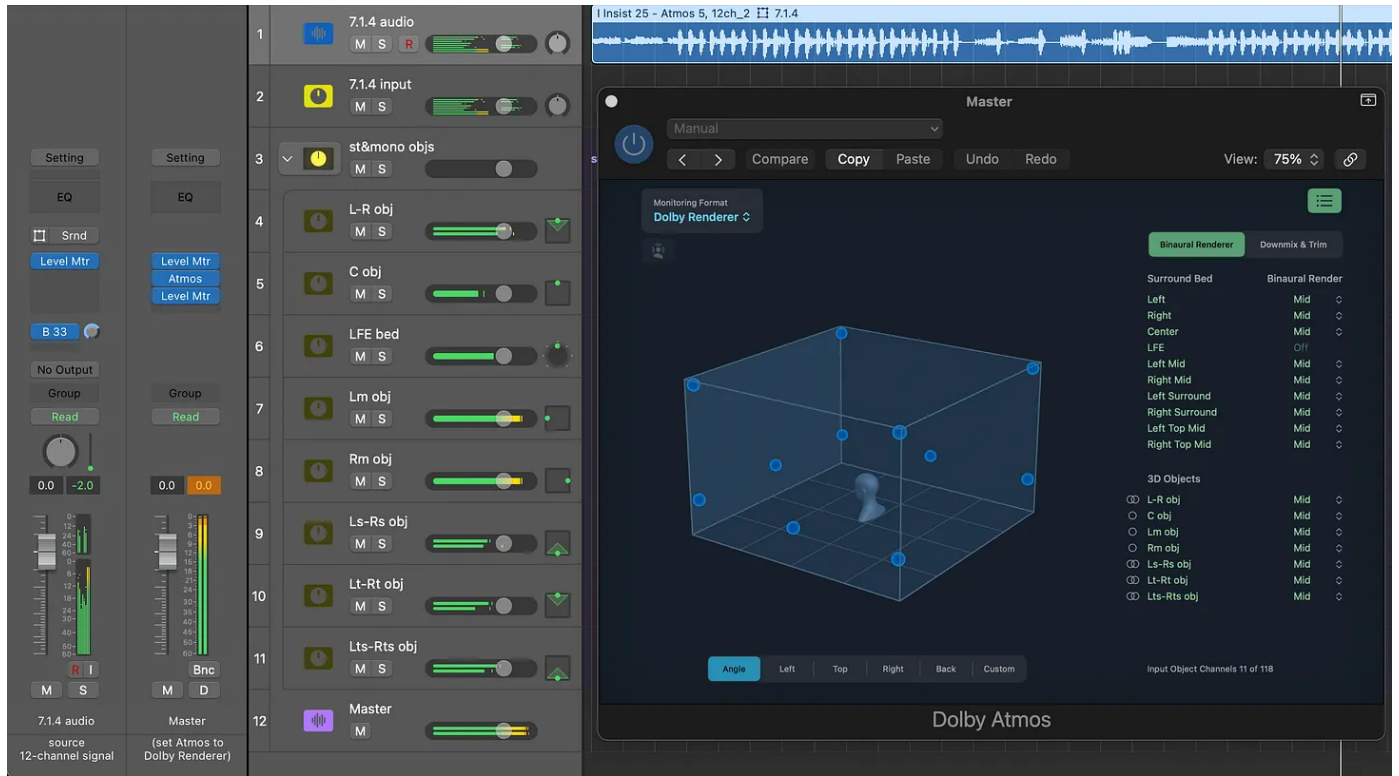


And then I made some other methods, because I love overkill.

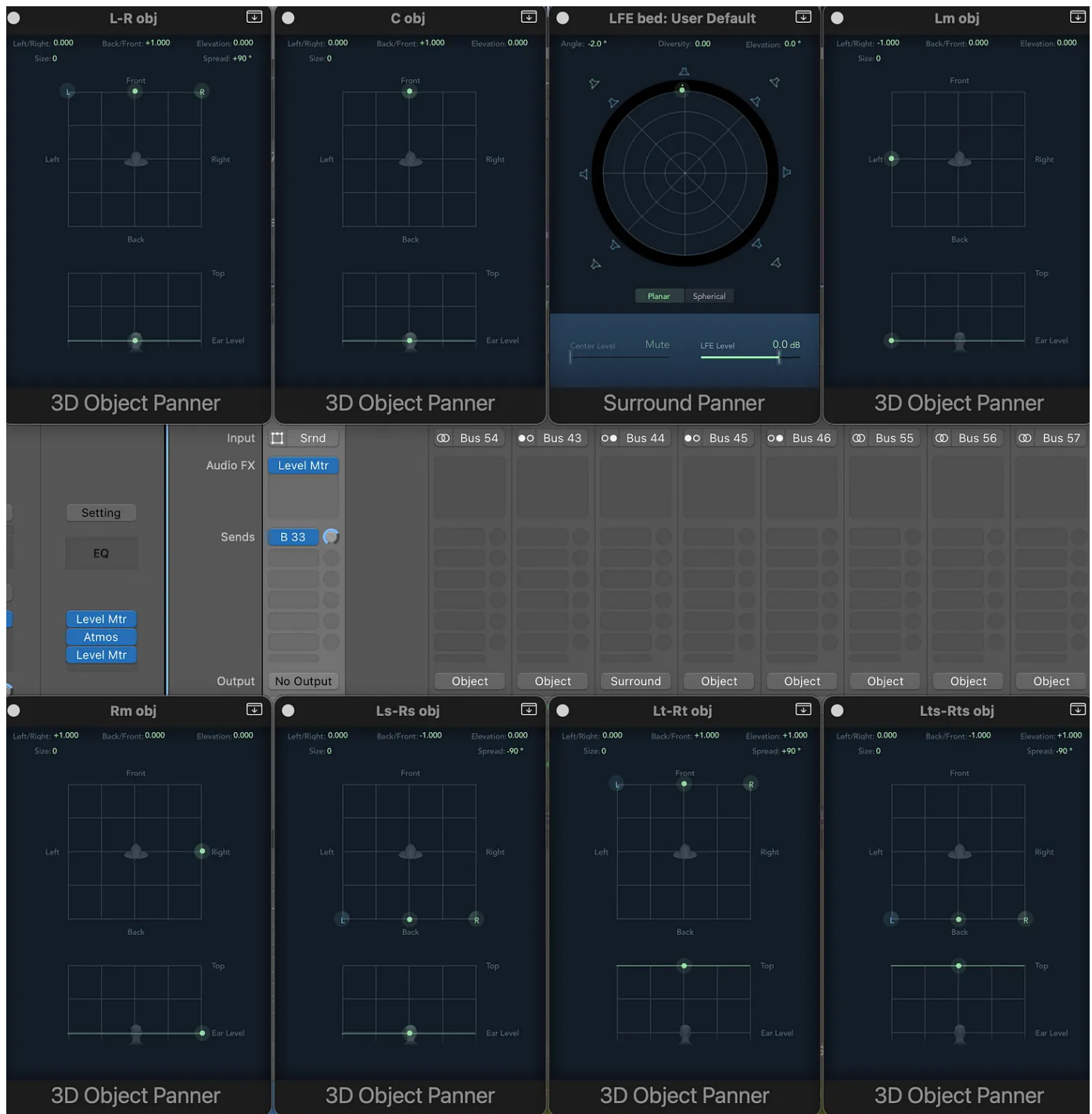
METHOD 2: PROJECT ALTERNATIVE "STEREO & MONO OBJECTS"

- There's a Project Alternative called "st&mono objs", which is set up roughly like "mono objs", where LFE is the only bed track and C, Lm, Rm are mono objects; but the four corner pairs (L-R, Ls-Rs, Lt-Rt, Lts-Rts) are stereo objects, positioned in, get this, the corners.
 - Lm and Rm are mono object tracks, rather than a single stereo object track, because that's the only way the 3D Object Panner will let you position them where they need to go: on the sides, halfway between front and back.

- (With a stereo object output, the 3D Object Panner, as you move away from the front or back, brings the two channels closer to each other, so they actually overlap in the exact center when positioned at the exact front-to-back halfway point, where Lm and Rm need to go.)



And here's the panners for “st&mono objs”:

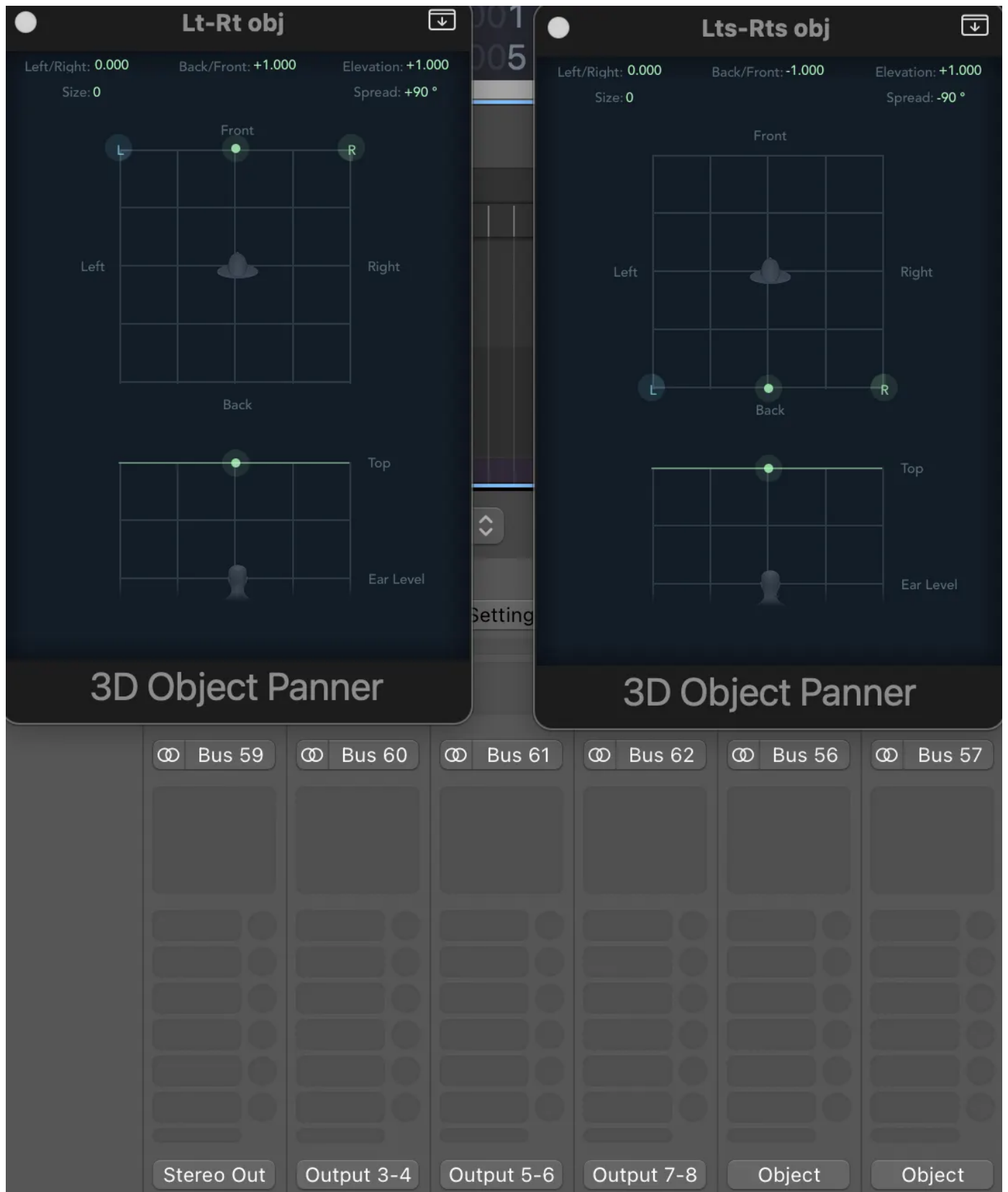


METHOD 3: PROJECT ALTERNATIVE “TOP-ONLY OBJECTS”

- Still here? There’s yet *another* Project Alternative called “top-only objs”, with the top corner pairs as two stereo object tracks; the ear-level 7.1 speakers are bed tracks (that is to say, tracks with ordinary speaker panning, not 3D object positioning).

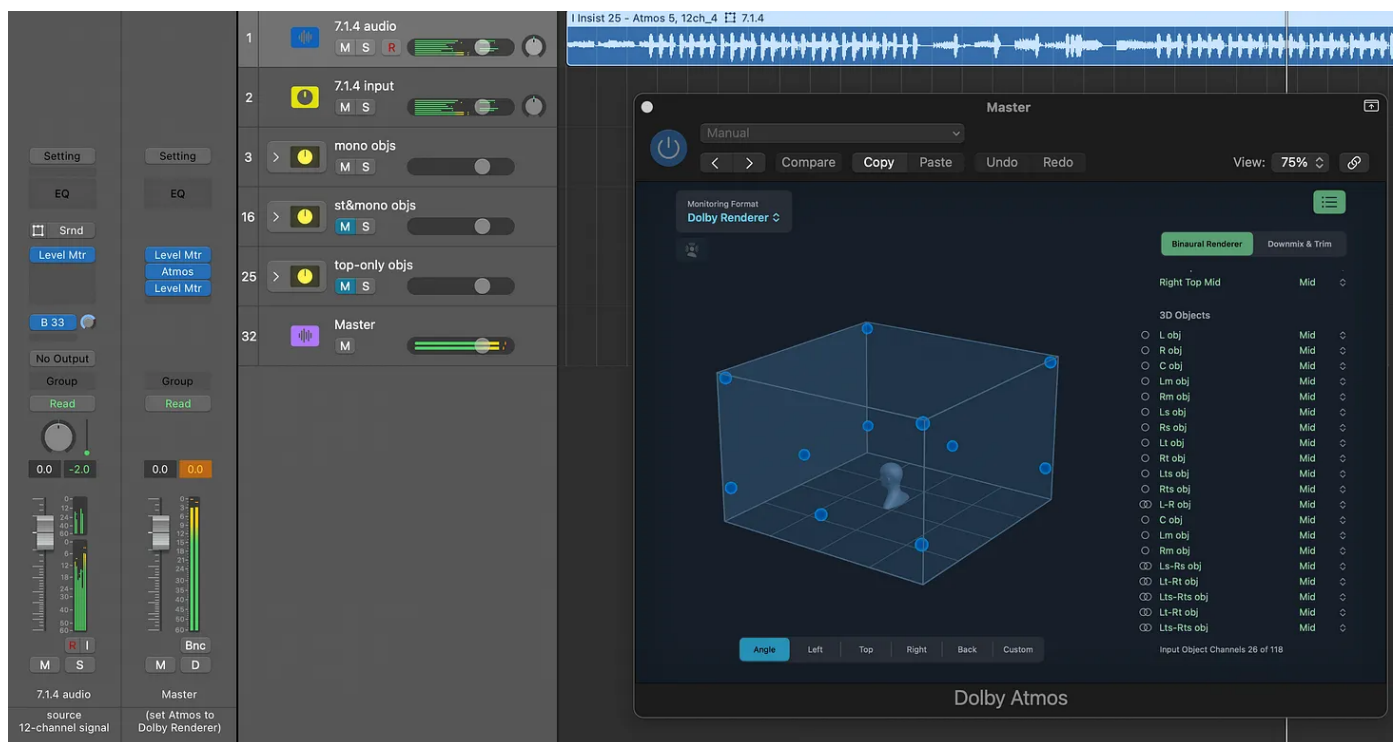
-
- The screenshot displays the Dolby Atmos mixing console in Pro Tools. The console is organized into 10 tracks, each with a specific function and level control. The Master track is set to 'Dolby Atmos' and 'Dolby Renderer'. The console also features various settings like EQ, Level Mtr, and B 33. The right side of the console shows a 3D visualization of the audio field with a speaker layout and a list of channels.
- | Track | Function | Level |
|-------|---------------|-------|
| 1 | 7.1.4 audio | M S |
| 2 | 7.1.4 input | M S |
| 3 | top-only objs | M S |
| 4 | L-R bed | M S |
| 5 | C+LFE bed | M S |
| 6 | Lm-Rm bed | M S |
| 7 | Ls-Rs bed | M S |
| 8 | Lt-Rt obj | M S |
| 9 | Lts-Rts obj | M S |
| 10 | Master | M |
- The Master track is set to 'Dolby Atmos' and 'Dolby Renderer'. The console also features various settings like EQ, Level Mtr, and B 33. The right side of the console shows a 3D visualization of the audio field with a speaker layout and a list of channels.
- | Channel | Level |
|----------------|-------|
| Surround Bed | Mid |
| Left | Mid |
| Right | Mid |
| Center | Mid |
| LFE | Off |
| Left Mid | Mid |
| Right Mid | Mid |
| Left Surround | Mid |
| Right Surround | Mid |
| Left Top Mid | Mid |
| Right Top Mid | Mid |
| 3D Objects | |
| Lt-Rt obj | Mid |
| Lts-Rts obj | Mid |
- The 3D visualization shows a speaker layout with a central speaker and four side speakers. The 'Dolby Atmos' logo is visible at the bottom right.

Here's the panners for the "top-only objs" method. Note the stereo-pair outputs for the 7.1 channels (again, to get around the problematic height Surround Balancer):



PROJECT ALTERNATIVE: "ALL METHODS"

- And, *finally*, no, really, a more complex *single* Project Alternative called “all methods”. You see where this is going: it’s got *all three methods*, available by muting the ones you’re not using, without needing to switch between Project Alternatives.
- For that one, if you’re dorking around with Near/Mid/Far settings in the Atmos plug-in, the first 11 mono objects are part of “mono objs”, the next 7 mixed stereo and mono objects are part of “st&mono objs”, and the final two stereo objects are part of “top-only” objs, augmented by the first eight channels under “Surround Bed” up top.



If you want to use one of the Project Alternatives as a template or simply don’t want the others, you can save one out as its own project: File > Project Alternatives > Export Alternative as Project.

HOW THIS THING WORKS, SHOULD YOU BE INTERESTED

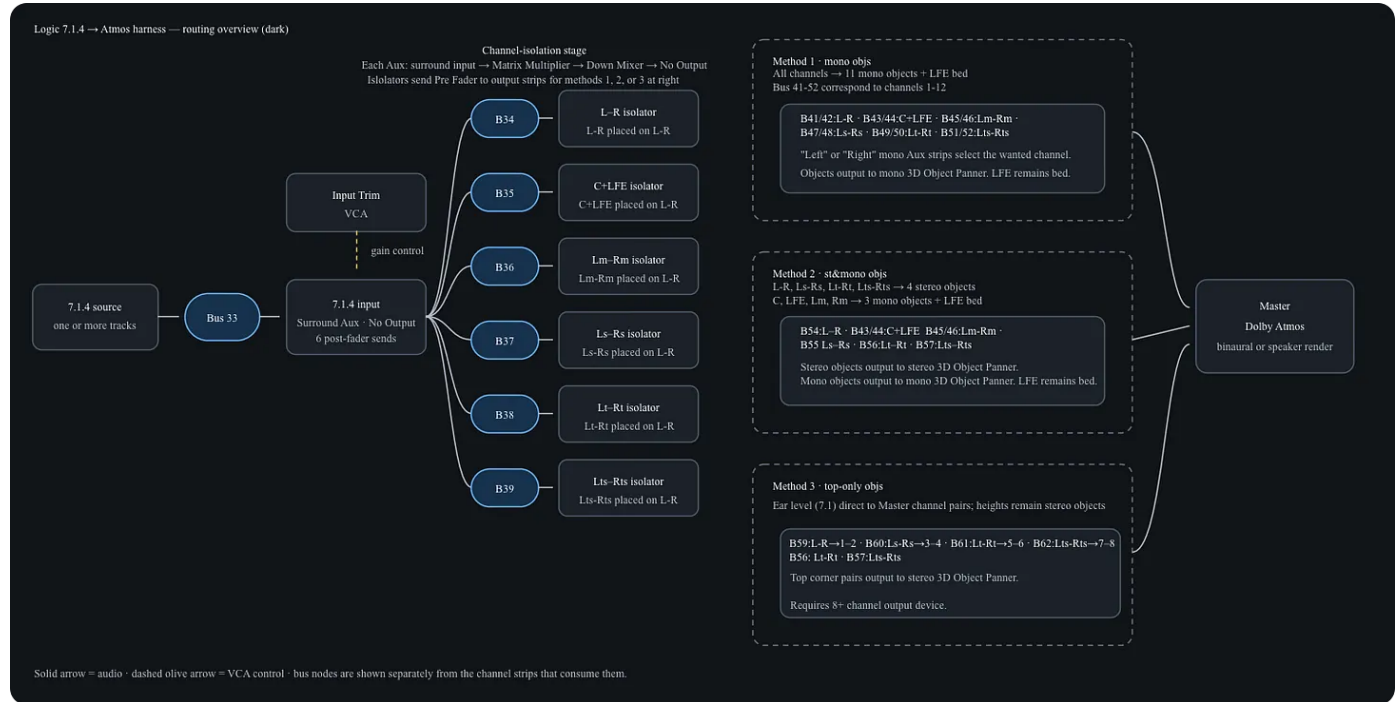
This harness uses a channel rerouting plug-in called Matrix Multiplier ([which you can read about over here](#)), followed by a little-known stock plug-in called [Down Mixer \[5.1→Stereo\]](#), to isolate every 7.1.4 channel, for transformation into mono or stereo objects, or for output as bed tracks, depending on method and channel type.

- The “mono objs” method:
 - sends all channels to 12 “Left” or “Right” aux strips, which, except for LFE, output using the mono 3D Object Panner.
 - outputs LFE to Surround, with the Mono-to-Surround Panner muting all but LFE (Atmos requires that LFE be a bed track).
- The “st&mono objs” method:
 - sends the non-corner channels to four “Left” or “Right” aux strips, which, except for LFE, output using the mono 3D Object Panner.
 - sends the corner channel pairs to four stereo aux tracks, which output using the stereo 3D Object Panner.
 - outputs LFE to Surround, with the Mono-to-Surround Panner muting all but LFE (Atmos requires that LFE be a bed track).
- The “top-only objs” method:
 - sends the top corner channel pairs to two stereo aux tracks, which output using the stereo 3D Object Panner.
 - sends the 7.1 (ear-level) channels (including LFE) to four stereo aux tracks, which output to the corresponding Master channel pairs.
 - (This avoids the signal-changing Surround Panner bug described above; it requires an 8+ channel output device such as BlackHole 16ch/64ch, or a hardware interface.)

So, if you set the Atmos plug-in to render to a 7.1.4 speaker layout, and you haven’t adjusted gain along the way, you get the same content as the original 7.1.4 audio; nothing is altered. Obviously, that’s not the point; the *idea* is to set Atmos to use the

Dolby binaural renderer. Useful? Who can say. I think it's cool. You can decide for yourself.

I had AI fart out a diagram of the signal flow, if that makes things any clearer:



Opening the mixer in Logic also sort of tells the story (this is for “mono objs”):

Input	Srnd	Bus 33		Bus 34	Bus 35	Bus 36	Bus 37	Bus 38	Bus 39		
Audio FX	Level Mtr	Level Mtr		MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	Level Mtr Atmos Level Mtr	
Sends	B 33	B 34 B 35 B 36 B 37 B 38 B 39		B 41 B 42	B 43 B 44	B 45 B 46	B 47 B 48	B 49 B 50	B 51 B 52		
Output	No Output	No Output		No Output	No Output	No Output	No Output	No Output	No Output		
Automation	Read	Read	Read	Read	Read	Read	Read	Read	Read	Read	Read
Pan											
VCA		input trim									
dB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	7.1.4 audio	7.1.4 input	mono objs	L-R	C+LFE	Lm-Rm	Ls-Rs	Lt-Rt	Lts-Rts	Master	input trim
	source 12-channel signal	(fade to avoid Dolby binaural auto-limiter)	non-LFE: mono obj LFE: bed	isolate L-R and send to outs	isolate C+LFE and send to outs on L-R	isolate Lm-Rm and send to outs on L-R	isolate Ls-Rs and send to outs on L-R	isolate Lt-Rt and send to outs on L-R	isolate Lts-Rts and send to outs on L-R	(set Atmos to Dolby Renderer)	use if wanting to keep 7.1.4 input at 0 dB



The other methods follow the same model. Here's "st&mono objs":

	Edit	Options	View	Sends on Faders:	Off	Single	Tracks	All			
Input		Srnd		Bus 33	Bus 34	Bus 35	Bus 36	Bus 37	Bus 38	Bus 39	
Audio FX	Level Mtr	Level Mtr		MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	Level Mtr Atmos Level Mtr
Sends	B 33	B 34 B 35 B 36 B 37 B 38 B 39		B 54	B 43 B 44	B 45 B 46	B 55	B 56	B 57		
Output	No Output	No Output		No Output	No Output	No Output	No Output	No Output	No Output	No Output	
Automation	Read	Read	Read	Read	Read	Read	Read	Read	Read	Read	Read
Pan											
VCA		input trim									
dB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	M S	M S	M S	M S	M S	M S	M S	M S	M S	M D	M S
	7.1.4 audio	7.1.4 input	st&mono objs	L-R	C+LFE	Lm-Rm	Ls-Rs	Lt-Rt	Lts-Rts	Master	input trim
	source 12-channel signal	(fade to avoid Dolby binaural auto-limiter)	corners:st; C, Lm,Rm:mono; LFE: bed	isolate L-R and send to outs	isolate C+LFE and send to outs on L-R	isolate Lm-Rm and send to outs on L-R	isolate Ls-Rs and send to outs on L-R	isolate Lt-Rt and send to outs on L-R	isolate Lts-Rts and send to outs on L-R	(set Atmos to Dolby Renderer)	use if wanting to keep 7.1.4 input at 0 dB

	Bus 54	Bus 43	Bus 44	Bus 45	Bus 46	Bus 55	Bus 56	Bus 57
Object	Object	Object	Surround	Object	Object	Object	Object	Object
Read	Read	Read	Read	Read	Read	Read	Read	Read
st&mono objs	st&mono objs	st&mono objs	st&mono objs	st&mono objs	st&mono objs	st&mono objs	st&mono objs	st&mono objs
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M S	M S	M S	M S	M S	M S	M S	M S	M S
>								
st&mono objs	L-R obj	C obj	LFE bed	Lm obj	Rm obj	Ls-Rs obj	Lt-Rt obj	Lts-Rts obj
corners:st; C, Lm,Rm: mono; LFE: bed			Surr Balancer must mute all except LFE					

And here's "top-only objs":

Input	Srrnd	Bus 33		Bus 34	Bus 35	Bus 36	Bus 37	Bus 38	Bus 39		
Audio FX	Level Mtr	Level Mtr		MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	MatrixMult Down Mix	Level Mtr Atmos Level Mtr	
Sends	B 33	B 34 B 35 B 36 B 37 B 38 B 39									
Output	No Output	No Output		No Output	No Output	No Output	No Output	No Output	No Output		
Automation	Read	Read	Read	Read	Read	Read	Read	Read	Read	Read	Read
Pan											
VCA		input trim									
dB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	7.1.4 audio	7.1.4 input	top-only objs	L-R	C+LFE	Lm-Rm	Ls-Rs	Lt-Rt	Lts-Rts	Master	input trim
	source 12-channel signal	(fade to avoid Dolby binaural auto-limiter)	tops:st; 7.1:ch pairs bed (use 12ch+ out dev)	isolate L-R and send to outs	isolate C+LFE and send to outs on L-R	isolate Lm-Rm and send to outs on L-R	isolate Ls-Rs and send to outs on L-R	isolate Lt-Rt and send to outs on L-R	isolate Lts-Rts and send to outs on L-R	(set Atmos to Dolby Renderer)	use if wanting to keep 7.1.4 input at 0 dB

And finally, “All Methods”. (I’ll spare you the output tracks, as they’re exactly the same as those you just looked at.)



All the buses this harness uses are ensconced in the 33-64 range:

- 33: 7.1.4 input; fans out to the isolator strips via Post Fader sends
- 34-39: isolator strips which put a channel pair on L-R, then send to output strips
- 41-52: mono buses for “mono objs” (LFE/44 bed, others mono objects)
 - (I cutely made buses 41-52 numerically correspond to channels 1-12)
- 54-57: stereo buses for the four corner pairs as stereo objects in “st&mono objs”; the mono buses for C, LFE, Lm, Rm are on their own strips, but reuse buses 43-46 (LFE/44 bed, others mono objects)
- 59-62: channel pair output buses for the 7.1 bed tracks in “top-only objs”; the stereo buses for Lt-Rt and Lts-Rts are on their own strips with stereo object outputs, but reuse buses 56-57

APPENDIX (YES, AN APPENDIX): ROUTING PATHS

- “mono objs”: 7.1.4 source → bus 33 (“7.1.4 in”) →
 - bus 34 (“L-R”) → MM (“L-R on L-R”) → Down Mixer [5.1>St] →
 - bus 41 (L aux) → Obj (L/R -1; B/F +1; E 0; Sz 0) → Atmos → Master
 - bus 42 (R aux) → Obj (L/R +1; B/F +1; E 0; Sz 0) → Atmos → Master
 - bus 35 (“C+LFE”) → MM (“C+LFE on L-R”) → Down Mixer [5.1>St] →
 - bus 43 (L aux) → Obj (L/R 0; B/F +1; E 0; Sz 0) → Atmos → Master
 - bus 44 (R aux) → Surround (all non-LFE channels muted) → Master
 - bus 36 (“Lm-Rm”) → MM (“Lm-Rm on L-R”) → Down Mixer [5.1>St] →
 - bus 45 (L aux) → Obj (L/R -1; B/F 0; E 0; Sz 0) → Atmos → Master
 - bus 46 (R aux) → Obj (L/R +1; B/F 0; E 0; Sz 0) → Atmos → Master
 - bus 37 (“Ls-Rs”) → MM (“Ls-Rs on L-R”) → Down Mixer [5.1>St] →
 - bus 47 (L aux) → Obj (L/R -1; B/F -1; E 0; Sz 0) → Atmos → Master
 - bus 48 (R aux) → Obj (L/R +1; B/F -1; E 0; Sz 0) → Atmos → Master
 - bus 38 (“Lt-Rt”) → MM (“Lt-Rt on L-R”) → Down Mixer [5.1>St] →
 - bus 49 (L aux) → Obj (L/R -1; B/F +1; E +1; Sz 0) → Atmos → Master
 - bus 50 (R aux) → Obj (L/R +1; B/F +1; E +1; Sz 0) → Atmos → Master
 - bus 39 (“Lts-Rts”) → MM (“Lts-Rts on L-R”) → Down Mixer [5.1>St] →
 - bus 51 (L aux) → Obj (L/R -1; B/F -1; E +1; Sz 0) → Atmos → Master
 - bus 52 (R aux) → Obj (L/R +1; B/F -1; E +1; Sz 0) → Atmos → Master
- “st&mono objs”: 7.1.4 source → bus 33 (“7.1.4 in”) →
 - bus 34 (“L-R”) → MM (“L-R on L-R”) → Down Mixer [5.1>St] →
 - bus 54 (St aux) → Obj (L/R 0; B/F +1; E 0; Sz 0; Sp +90°) → Atmos → Master

- bus 35 (“C+LFE”) → MM (“C+LFE on L-R”) → Down Mixer [5.1>St] →
 - bus 43 (L aux) → Obj (L/R 0; B/F +1; E 0; Sz 0) → Atmos → Master
 - bus 44 (R aux) → Surround Panner passing only LFE → Master
- bus 36 (“Lm-Rm”) → MM (“Lm-Rm on L-R”) → Down Mixer [5.1>St] →
 - bus 45 (L aux) → Obj (L/R -1; B/F 0; E 0; Sz 0) → Atmos → Master
 - bus 46 (R aux) → Obj (L/R +1; B/F 0; E 0; Sz 0) → Atmos → Master
- bus 37 (“Ls-Rs”) → MM (“Ls-Rs on L-R”) → Down Mixer [5.1>St] →
 - bus 55 (St aux) → Obj (L/R 0; B/F -1; E 0; Sz 0; Sp -90°) → Atmos → Master
- bus 38 (“Lt-Rt”) → MM (“Lt-Rt on L-R”) → Down Mixer [5.1>St] →
 - bus 56 (St aux) → Obj (L/R 0; B/F +1; E +1; Sz 0; Sp +90°) → Atmos → Master
- bus 39 (“Lts-Rts”) → MM (“Lts-Rts on L-R”) → Down Mixer [5.1>St] →
 - bus 57 (St aux) → Obj (L/R 0; B/F -1; E +1; Sz 0; Sp -90°) → Atmos → Master
- **“top-only objs”:** 7.1.4 source → bus 33 (“7.1.4 in”) →
 - bus 34 (“L-R”) → MM (“L-R on L-R”) → Down Mixer [5.1>St] →
 - bus 59 (St aux) → Stereo Output → Master
 - bus 35 (“C+LFE”) → MM (“C+LFE on L-R”) → Down Mixer [5.1>St] →
 - bus 60 (St aux) → Output 3-4 → Master
 - bus 36 (“Lm-Rm”) → MM (“Lm-Rm on L-R”) → Down Mixer [5.1>St] →
 - bus 61 (St aux) → Output 5-6 → Master
 - bus 37 (“Ls-Rs”) → MM (“Ls-Rs on L-R”) → Down Mixer [5.1>St] →
 - bus 62 (St aux) → Output 7-8 → Master
 - bus 38 (“Lt-Rt”) → MM (“Lt-Rt on L-R”) → Down Mixer [5.1>St] →
 - bus 56 (St aux) → Obj (L/R 0; B/F +1; E +1; Sz 0; Sp +90°) → Atmos → Master
 - bus 39 (“Lts-Rts”) → MM (“Lts-Rts on L-R”) → Down Mixer [5.1>St] →

- bus 57 (St aux) → Obj (L/R 0; B/F -1; E +1; Sz 0; Sp -90°) → Atmos → Master

Did you enjoy all that? I did. Hope you find it useful, or at least fun.

Questions welcome at ivanx@ivanxmusic.com, or post them below.

Thanks for reading this fuckin' thing! Subscribe
for free to be barraged with more Logic and
Atmos arcana.

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