

Following the SMPTE standard has several repercussions for us. For a theatrical release on 35mm with a Dolby digital soundtrack, this means that the loudest sounds can go almost four times louder (and remember, reference level is already “loud and clear.”) But people mixing for TV broadcast have to be careful that they don’t actually use a lot of that available headroom. For a simple two track stereo mix, their maximum levels shouldn’t exceed –10 dBFS to –6 dBFS, depending on their network specs. (Delivery in 5.1 format for digital broadcast has somewhat different specs.)

LMU production specs call for a mix that meets “broadcast standards.” We’d like your projects to play well if broadcast (a number of LMU films have played on PBS, for instance.) And broadcast-friendly mixes also tend to play better in home theater environments, or off a TV in a producer’s office. But as we’ll see, a “broadcast-friendly” mix is a kind of compromise between film and TV.

Another problem is, asking a typical student filmmaker not to push their loudest peak levels beyond –6 dBFS is like handing them the keys to a Ferrari and asking them not to drive above 65mph. But that’s how the pros do it, and that’s what we’re expecting from you.

I have an old mix from years ago, and I used a –12 dBFS reference level in Final Cut Pro 7. Do I have to re-mix?

Not necessarily. If you did a proper mix with respect to a –12 dBFS level, all you really have to do is take existing mix and lower it by 8 dB. The easiest way to do that is with the master fader in the mixer window. Since you only had 12 dB of headroom to work with before, your loudest sounds should “automatically” fall into the recommended headroom for broadcast.

After adjusting the master fader, double-check the result by playing it back in a room properly calibrated for a –20 dBFS reference level.

(If that seems too simple, rest assured that I have done similar level tweaks for delivery to European broadcasters, who use a slightly different reference level of –18 dBFS. If you think about it, reference level simply represents “good and strong”, so as long as we don’t exceed the headroom of our target media there is a bit of leeway as to the exact number where that level might be defined. The important thing is that our mix has a consistent and intelligent relationship to that reference level – only then can we get away with adjusting it up and down the scale if needed.)

So how should my two-track stereo mix levels relate to a –20 dBFS reference?

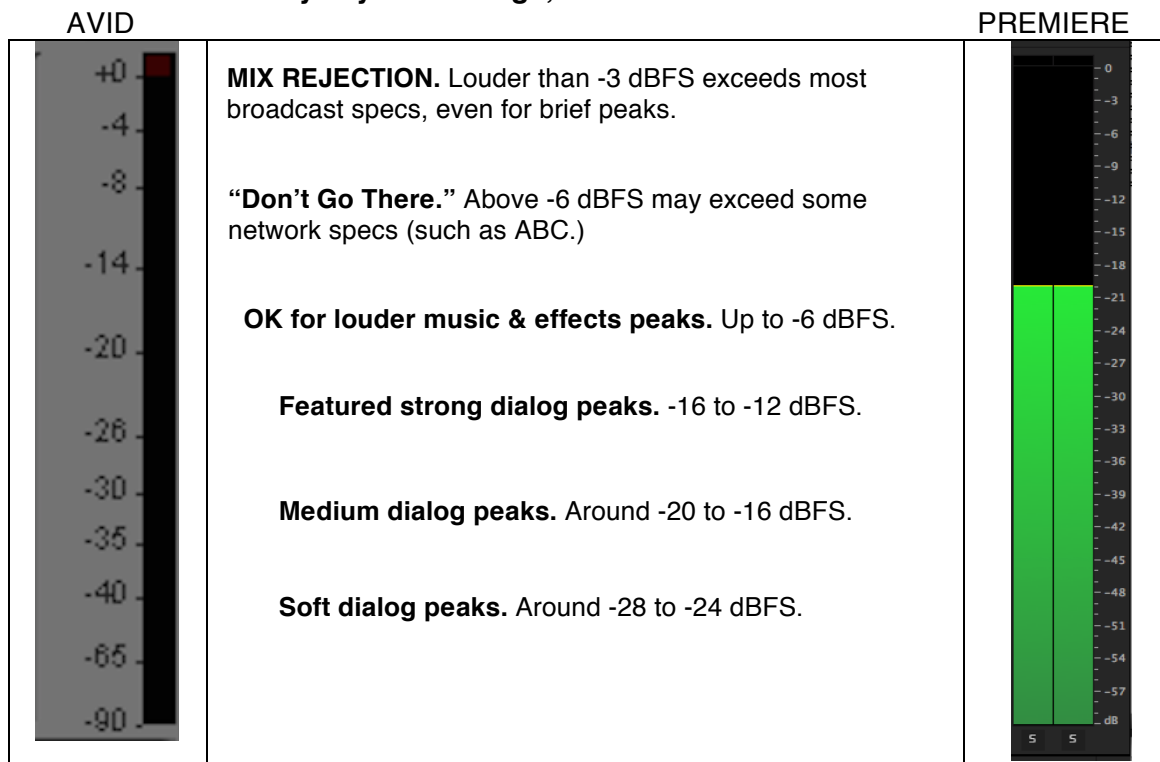
Simple enough math:

<i>SOUND</i>	<i>TYPICAL PEAK LEVELS IN dBFS (instantaneous peak meter)</i>
STRONG DIALOG	-16 to -12 dBFS
AVERAGE DIALOG	-22 to -16 dBFS
SOFT DIALOG	-27 to -22 dBFS*

*If you want your mix to be truly “broadcast ready”, be prepared to make some further adjustments to your mix. Broadcasters like their dialog levels about 3 dB louder than theatrical mixes. But if you simply boost your entire mix by 3 dB, you may find some of your loudest peaks are too hot.

AVID/ADOBE PREMIERE LEVELS FILM MIX METERING IF USING A -20 dBFS REFERENCE (SMPTE STANDARD)

Based on a -20 dBFS reference level, with dialog panned to the center of a stereo mix, a “broadcast-friendly” dynamic range, and meters with an *instantaneous rise time*.



Now that we’ve over-simplified all this down to a chart, let’s stress the following: *this does not mean that every word of dialog needs to hit some kind of magic number*. These are just ballpark figures for the peaks of representative lines of dialog.

So if it’s so simple, why make it complicated?

The Details

How do I meter dialog for a 5.1 surround mix?

Dialog meter levels were given assuming a 2 track stereo mix. If you’re doing a true 5.1 mix and your principal dialog plays in just the center channel (and your meters are looking at just that one channel), then add 3 dB to the figures given. Why? Because if two speakers are each playing the same dialog, the channels add together for a 3 dB increase in listening level. If you’re relying on just one channel to play the sound, you have to make up for the difference to get the same loudness.

Why do different meters show different levels?

Different audio meters have different *ballistics*, meaning they react differently to quick changes in sound level. VU meters are especially tricky to use for judging dialog because they’re designed to react quite slowly – they have a 300 millisecond *rise time* (reaction time) to fully deflect. So a quick transient peak like a drum hit might barely move the VU needle, even though it is good and loud.