Example of Video Transcriptions for Course 200: Audio Applications

Mixer Gain Structure: Lesson and Outline Text

1. What is Gain Structure?
2. Dynamic Range
3. Peak Room
4. Level Controls
5. Maximum Output Level
6. The Piezo Trick
7. The Noise Floor
8. Dynamic Range Revisited
9. Channel Trim or Gain
10. Summing Room
11. Know Your Meter
12. PFL or Solo
13. The Sound Check

200_10 Mixer Gain Structure - Clip 1

1. What is Gain Structure? 0:09

A good system gain structure begins with a good mixer gain structure. Get this part right, and the system gain structure is easy. Get it wrong and the rest is a mess. The objective of a good mixer gain structure is the following, in order of priority.

1. Have all of the level controls operate in their optimal range.

2. Have visual feedback of the proper level from the mixer's meter.

3. Minimize the output noise from the mixer, and

4. Avoid distortion due to clipping.

These are the objectives for setting up any mixer, no matter the make or model. The first two items assure the realization of the second two. If the meters and faders are right, the gain structure is right.

I'll be evaluating an analog console, but the procedure and outcome are pretty much the same for a digital console. I'll start from scratch, assuming a "black box" mixer with no manual. The procedure is universal and applies to any mixer.

Start by zeroing or bypassing any channel tone control settings. Power amplifiers should be turned off, or down. The mixer will be producing some signal levels that could damage loudspeakers if the amps are up.

2. Dynamic Range 1:45

The dynamic range of an audio component is the difference between the maximum and minimum signal levels that can come from the device. In this lesson, I'll show how to …