Overcoming The Pitfalls Of Poor Audio

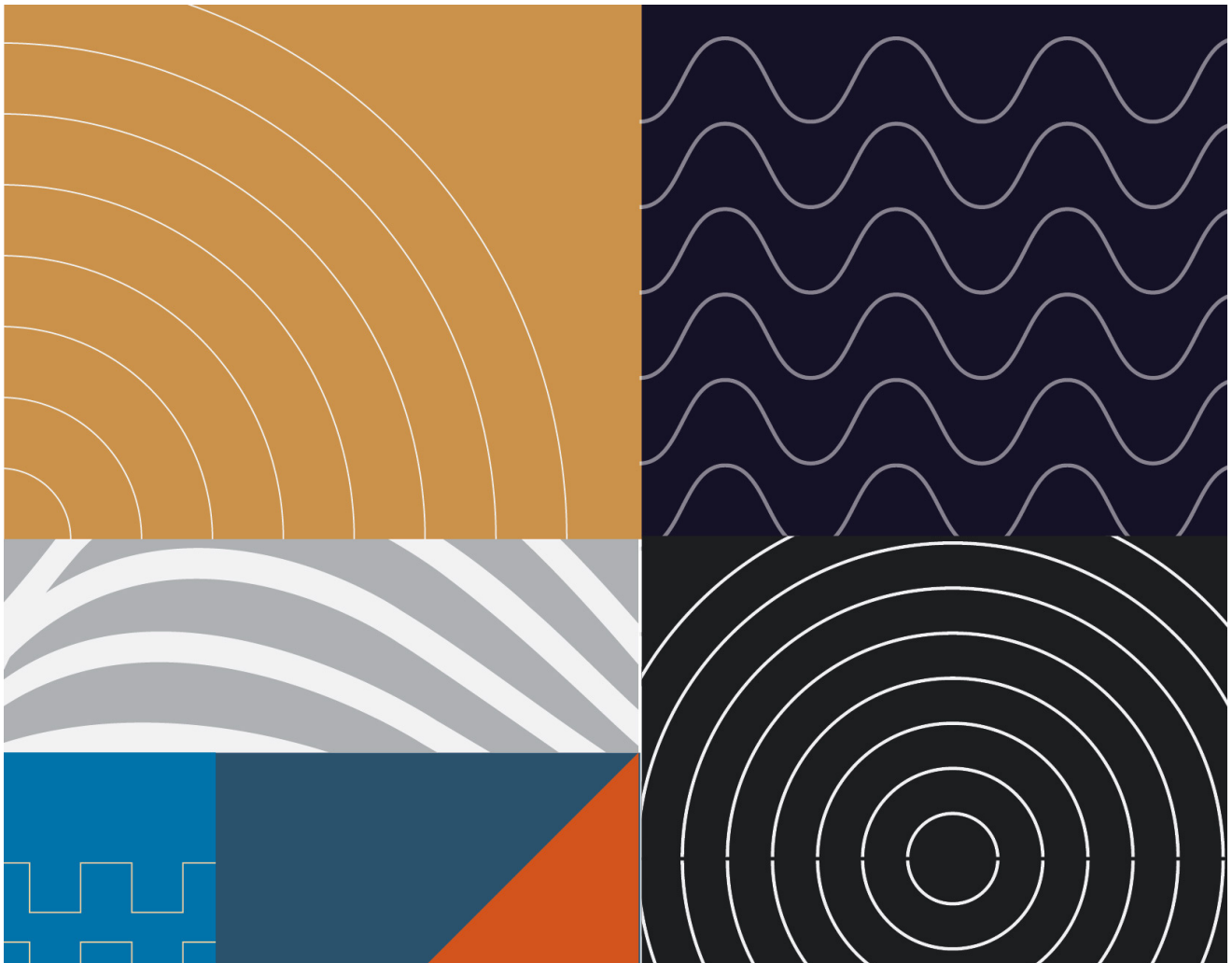# Table of Contents

Overcoming The Pitfalls Of Poor Audio

Audio is a differentiator that can make or break user experience. In an increasingly crowded marketplace, with more than 8 billion connected smartphones, tablets, PCs, TVs, TV boxes and other bits of audio hardware, there's more customers than ever before demanding an instant connection with a product. When poor user experience translates into lost sales, avoid these four major pitfalls when it comes to audio.
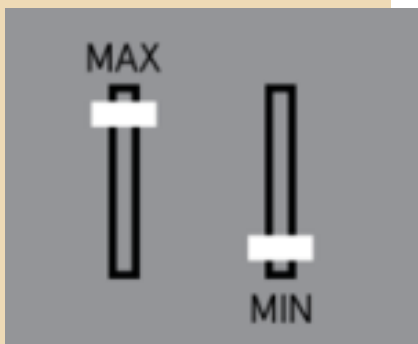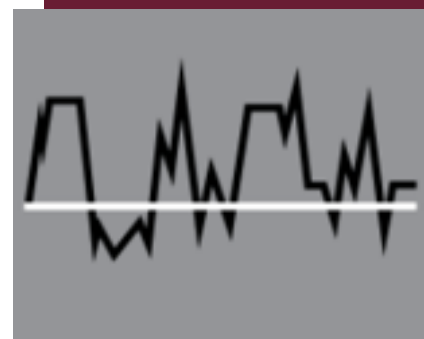
When audio is too quiet / too loud, it means...

- The ambient noise level was not considered
- Wrong size acoustic component chosen
- Wrong frequency or frequencies selected for tone

If there's distorted sound/amplifier clipping, it means...

- Wrong input level to the amplifier
- Amplifier gain is set too low or high
- Not enough amplifier power

If audio has a thin, tinny sound, it means...

- The resonant frequency of the speaker is too high
- The size of the speaker is too small
- Not enough enclosure volume for the speaker

When there's echo and feedback, it means...

- A microphone placed too close to the speaker
- Microphone mounted to the same PCB as speaker
- Microphone and speaker mechanically coupled to the same surface

Making Sound Decisions

Audio is a differentiator that can make or break the user experience.
Taking the time to consider your product's audio while in the conceptual phase of product design is crucial to delivering a strong user experience.

HERE ARE THE 6 MAJOR CONSIDERATIONS FOR AN AUDIO PLAN:

1 Consider the ambient environment in which your product will be used

2 Establish the audio component dimensional envelope early on

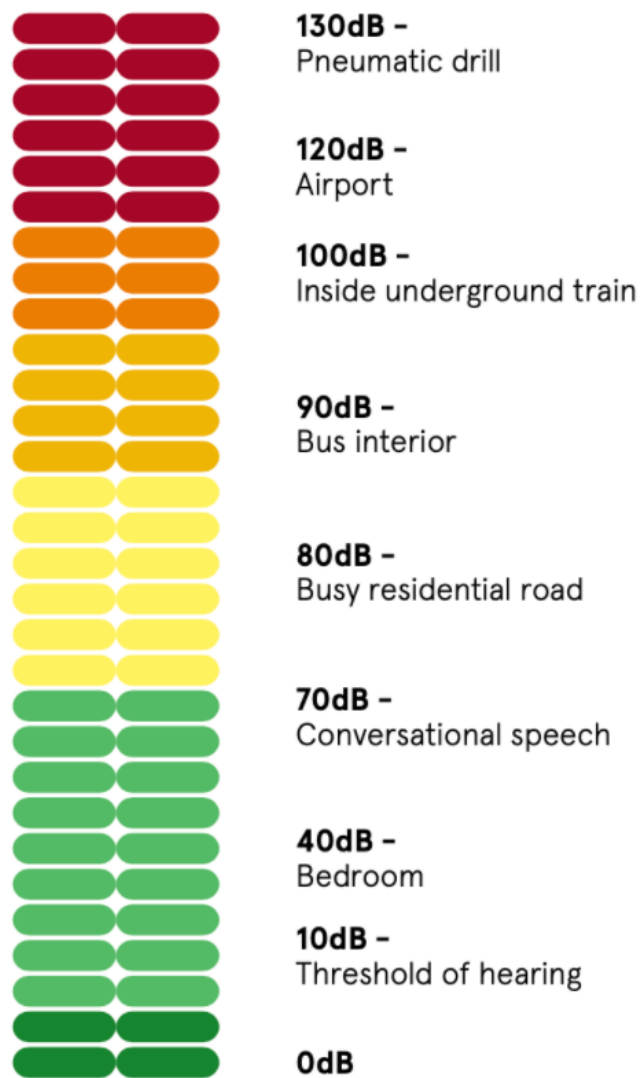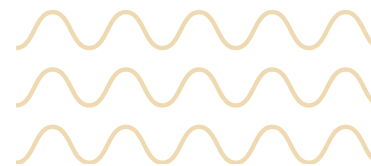**3** Reference the audio component's SPL rating and distance

4 Budget for more power than what you might use

5 Choose a larger amplifier than what you might need

6 Test your audio performance before closing the mechanical and electrical design

130dB –
Pneumatic drill

120dB –
Airport

100dB –
Inside underground train

90dB –
Bus interior

80dB –
Busy residential road

70dB –
Conversational speech

40dB –
Bedroom

10dB –
Threshold of hearing

0dB

Sound pressure level