

Why does my audio system hum/buzz?

Electrical Safety and EMC Legislation require certain ways of designing AC power systems. This legislation considers only safety and EMC, not audio systems and it is mandatory to implement it. This can lead to audio problems. Audio systems with the following conditions may experience unpleasant hum/buzz or other noises:

- The audio system includes at least one AC mains powered device or has an AC mains charger attached AND has **NO** Ground/Earth connection at all
- The audio system at least two AC mains powered devices, so **more than one Ground/Earth**, ie Multiple Ground/Earth connections

The solution:

Adjust the audio system so that **One and only One** Ground/Earth connection is presented for the whole system.

Note on Noises:

Hum, low-freq noise
(eg. car engine idling)



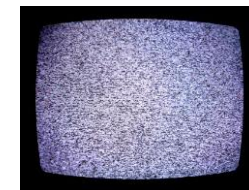
Buzz
(eg. Beehive/Hornets' nest)



Coil Noise
(eg. Whine/Chirping/Twittering noise)

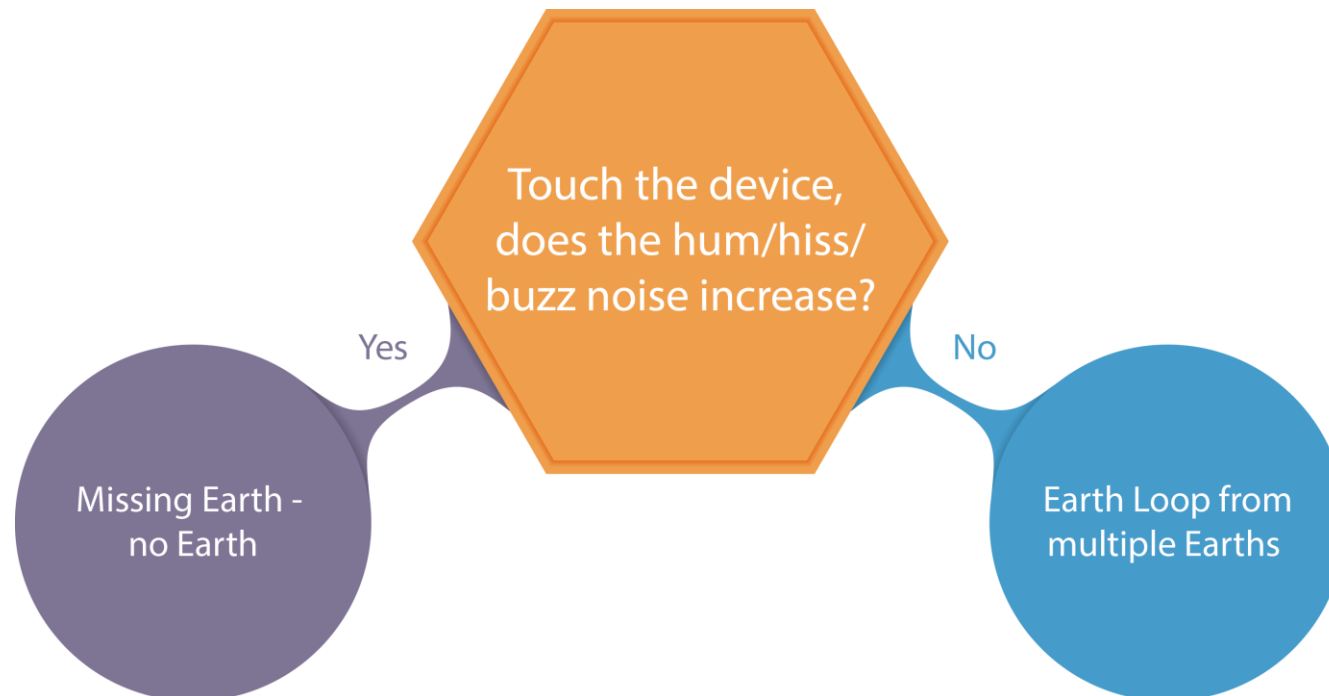


Hiss
(eg. static noise like rushing water/waterfall at a distance or static from a detuned TV/Radio)



Step 1: Identify the reason for the hum/buzz

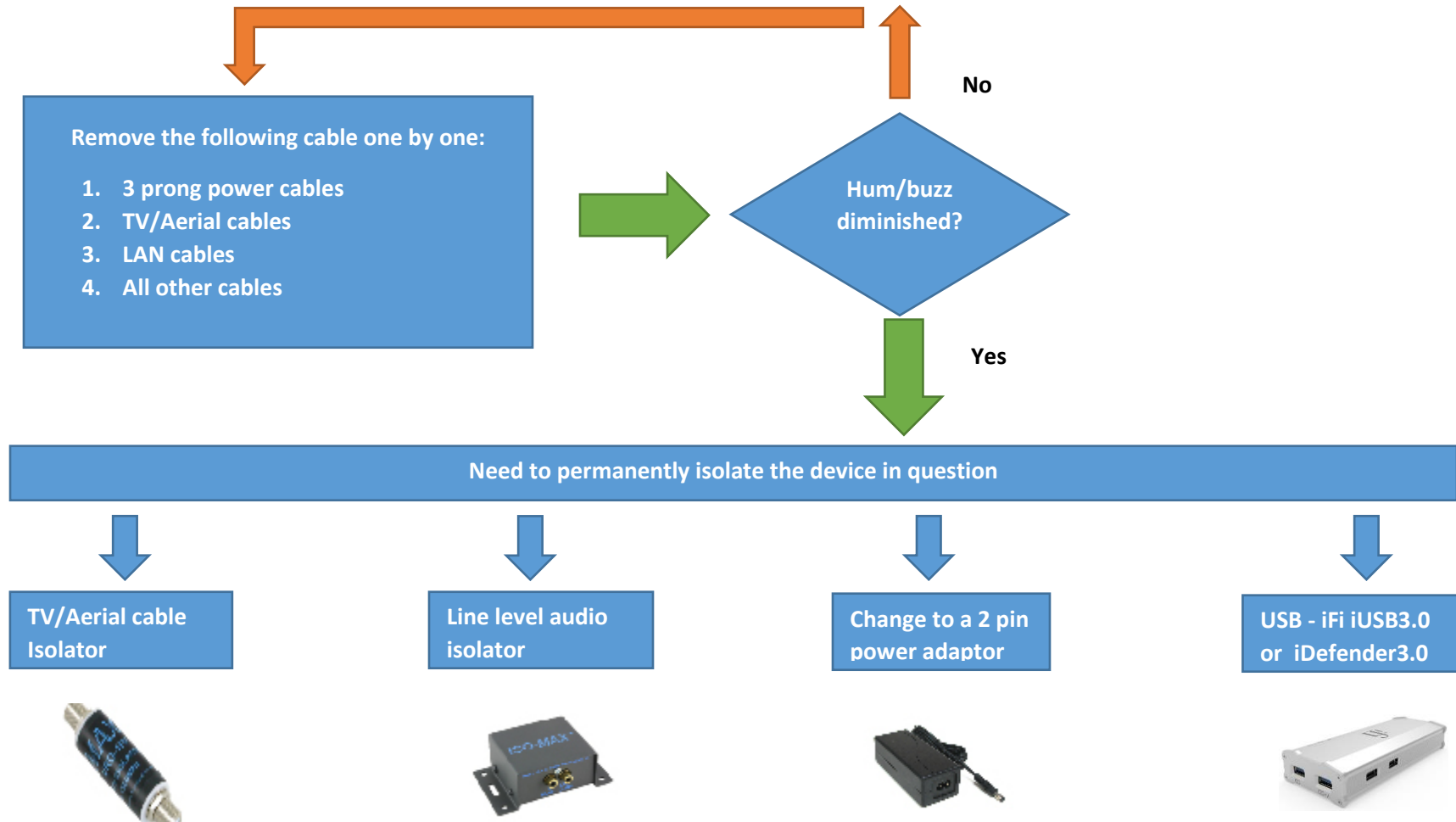
Explanation: Find out whether the system has no Ground/Earth connection at all (the most likely explanation!) OR the system has more than one Ground/Earth connection.



Step 2A: Fix system with Multiple Grounds/Earths

Explanation: to find out which extra Earth connection(s) is/are causing the hum/hiss/buzz.

Remove the extra Earth connection(s) until the hum/buzz has subsided.



Step 2B: Fix system with No Ground/Earth

Explanation: to introduce one (and only one) Ground/Earth connection into the system.

