

Fix Car Audio Noise (Ground Loop / Alternator Whine)

Track noise methodically; change one variable at a time.

Basics

- Separate power and signal runs; avoid parallel routing where possible.
- Grounds: star ground to bare metal; short and equal gauge.
- Check RCAs for tight fit; replace damaged cables.

Diagnosis

- Noise changes with engine RPM → alternator whine: improve grounds, try different chassis point, or use ground-loop isolator as last resort.
- Noise with volume at zero → amp gain too high or poor grounding.

Fixes

- Move RCAs to opposite side from power.
- Sand ground points to shiny metal; use serrated washer.
- Verify head unit ground; sometimes running a dedicated ground fixes it.