Reducing Static: How to Improve Your AM Radio Reception in a Noisy World

We've noticed some questions and concerns about increased static on our radios compared to others. This feedback is common with radios as sensitive and selective as ours. While this sensitivity allows them to pick up weaker, distant signals, it can also mean they're more affected by unwanted interference, including static from electronic devices in your home or environment.

I'm not going to pretend to be an expert on the concept of the "noise floor," but after nearly 30 years of working with radios and reception, I've seen some dramatic changes in it. For those looking for more technical insights, I've included resources at the end of this post that dive deeper into the science of noise floors. Here, I'll share a practical perspective based on my experiences.

In simple terms, the **AM noise floor** refers to the level of background noise—often heard as static—that interferes with receiving clear radio signals. This noise comes from a wide variety of sources, and over the years, the number of those sources has grown exponentially.

How Times Have Changed

When I started at C. Crane in the late 1990s, my home had just one TV, a landline cordless phone operating at 900MHz, and standard incandescent lightbulbs. Internet access was dial-up, and reception was excellent—even without antennas. Testing radios outdoors or inside a home was much simpler because the "noise" levels were so much lower.

Today, like most modern homes, mine is filled with potential sources of interference: multiple smart TVs with Wi-Fi and Bluetooth, a mesh Wi-Fi network, LED lighting, Bluetooth speakers, laptops, tablets, gaming consoles, and more. Everything, it seems, operates on a frequency, and that cumulative electronic noise has a significant impact on radio reception.

The situation is no better at C. Crane headquarters, where our workspace is surrounded by Wi-Fi routers, Bluetooth devices, computers, and fluorescent lighting with auto shut-off features. Just like in the late '90s, we still step outside to test radios for clear reception, but even that can sometimes be a challenge due to the environmental noise created by public Wi-Fi hotspots, LED streetlights, and other transmitters.

Why Noise Happens and What You Can Do

Every electronic device emits energy at certain frequencies, and when you consider how many devices are operating in your home—and in homes nearby—it's no surprise that the noise floor has risen dramatically over the years. Add to that public infrastructure, such as Wi-Fi-equipped streetlights and traffic systems, and you begin to see why radio reception has become more challenging.

If you're dealing with static, there are practical steps you can take to identify and reduce interference:

1. **Start Simple:** Run your radio on batteries and walk around your home. Notice if the noise gets worse or better in certain areas—this can help you identify the source of the interference.
2. **Rotate the Radio:** AM radios are directional, so rotating them can help pinpoint where the noise is coming from.
3. **Go Outside:** If the static improves significantly outdoors, it's likely your home environment is the culprit. Consider using an external antenna to boost reception or investigate further.
4. **Investigate Electrical Noise:** Some people find that turning off circuit breakers helps identify wiring issues or faulty devices contributing to noise throughout the home.

You can also check out our Radio Noise resource page for more ideas, including less obvious culprits like LED lightbulbs, power adapters, and nearby appliances.

Our good friend Jock Elliott also had these suggestions:

- Improving radio reception is all about improving signal to noise…you can reduce noise (as suggested above) or you can improve signal or both. Here's an article he wrote about the BHI noise eliminating module.
- The Terk AM Advantage antenna is another way to improve the signal – in this article Jock shows how he uses his.
- You could also build your own AM loop antenna

When a Traditional Radio Isn't Enough

Unfortunately, the rise in the noise floor means that a truly static-free experience may not be possible in some environments, especially if interference persists even outdoors. Our radios are highly sensitive, which can sometimes make static seem worse compared to less sensitive models. If this is the case for you, our **CC WiFi 3 Internet Radio** offers an excellent alternative. By streaming stations online, you can enjoy crystal-clear reception without worrying about environmental noise.

The Bottom Line

Radio reception has become more challenging in our increasingly connected and noisy world, but that doesn't mean it's impossible to enjoy clear AM signals. With some troubleshooting, adjustments, and the right equipment, you can often improve your listening experience. And when traditional solutions fall short, internet radios provide an option to stay connected to your favorite stations without interference.

Whether you're a seasoned radio enthusiast or a newcomer, we're here to help you navigate the challenges of modern radio reception. For more tips and ideas, visit our website or reach out—we're happy to share what we've learned over the years.

In depth resources for noise floor

https://www.radioworld.com/tech-and-gear/interference-define-and-conquer

Click to access NAB2009-Implications-of-Increasing-Man-Made-Noise-Floor-Levels-on-Radio-Broadcasting-Charles-Kelly.pdf

https://www.highfrequencyelectronics.com/index.php?option=com_content&view=article&id=553:receiver-sensitivity-and-equivalent-noise-bandwidth&catid=94&Itemid=189

https://whisperroom.com/tips/demystifying-the-noise-floor-unraveling-its-impact-on-audio-quality

https://www.radioworld.com/columns-and-views/steps-to-lower-noise-floor-and-revitalize-am-radio

https://forums.radioreference.com/threads/noise-floor-receive-amp-settings-and-signal-reports.454430

https://community.naimaudio.com/t/what-actually-is-a-noise-floor-technically-and-subjectively/3522/13

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