Stop the Signal Struggle: Avoiding Bad Wi-Fi Practices in Modern Networks



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It’s 2025, and we still see it every day - dropped Zoom calls, inconsistent performance, slow roaming, and frustrated end users. Often, these issues don’t stem from poor hardware or underpowered access points. The root cause? Bad wireless practices that should have been phased out years ago.

In this post, I want to highlight the common wireless mistakes I encounter on client sites and provide actionable best-practice recommendations to avoid becoming your own worst enemy in the WLAN.

Bad Practice #1: Still Using 2.4 GHz as Primary Band

It’s shocking how many networks today still lean on 2.4 GHz. This band is congested, prone to interference (from microwaves to Zigbee), and offers limited usable channels - essentially just **1, 6, and 11**. Layer in Bluetooth, BLE advertising, and legacy 802.11b rates, and you’ve got a recipe for poor performance.

Fix It: Prioritize 5 GHz or 6 GHz where client support exists. Trim your 2.4 GHz SSID footprint to essential IoT or low-bandwidth use cases. Disable low MBRs (1, 2, 5.5 Mbps) and avoid OBSS overlaps. Use tools like LinkSprinter or a proper survey kit to confirm signal levels and channel utilisation.

Bad Practice #2: Overusing Channel Bonding

Using 40 or 80 MHz channel widths across the board might seem like a performance booster, but in most environments it just leads to channel overlap, increased contention, and worse throughput.

Fix It: Stick to **20 MHz** in dense environments, especially on 2.4 and 5 GHz. Reserve 80 MHz bonding for low-density or point-to-point mesh designs. On 6 GHz (where there's real space to breathe), consider **80 MHz carefully**, and only when you’ve verified low BSS load and channel reuse.

Bad Practice #3: Deploying Access Point Blindly

It’s 2025 - we can’t afford to install access points without understanding their RF environment, orientation, and PoE capability. I still see APs mounted sideways, 15m apart in hallways, powered by budget switches incapable of 802.3at or bt.

Fix It: Before deploying an AP:

- Validate cable spec and length (Cat6, ≤100m with patch leads)
- Check power draw vs. switch budget
- Confirm VLAN tagging, DHCP reachability, and gateway ping success
- Use tools like EtherScope or CyberScope to validate layer 2 and 3

After install, document MAC, location, switch port, and verify all SSIDs broadcast as expected on correct VLANs.

Bad Practice #4: Ignoring DFS and Regulatory Considerations

Blindly enabling DFS channels without considering scan time, radar detection events, and client behavior can disrupt connectivity - especially for voice and roaming-sensitive applications.

Fix It: Understand your regulatory domain. Not all 5 GHz channels are created equal. For example:

- **U-NII-1 and U-NII-3** are DFS-free and ideal for stable client operation.
- **U-NII-2a/2c** require DFS and are better suited for static client environments.

In 6 GHz, preferred scanning channels (PSC) allow better discovery - but only if devices support them. Use them smartly.

Bad Practice #5: Too Many SSIDs

A network with 8-10 SSIDs may look comprehensive on paper but kills airtime. Each SSID beacon consumes airtime, especially in high-density deployments.

Fix It: Keep SSIDs to **4 or fewer**. Use dynamic VLAN assignment or identity-based policies to separate user roles. Use RNR (Reduced Neighbor Reports) in Wi-Fi 6/6E for better roaming efficiency across bands.

□□ Bad Practice #6: Set-and-Forget Transm Power and Antenna Settings

Setting APs to full power across the board creates artificial cell overlaps and increases co-channel interference (CCI). Equally, misconfigured external antennas or down-tilted internal radios ruin coverage patterns.

□**Fix It**:

- Use adaptive or manually tuned TX power (e.g., 7 dBm for 2.4 GHz, 13 dBm for 5 GHz)
- Validate coverage with Ekahau or similar tools
- For directional or patch antennas, respect polarization and mounting guidelines

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Final Thoughts

You can’t solve RF problems by throwing more APs into the mix or maxing out every setting in your controller. Wireless is a delicate balance of physics, protocol behavior, and user expectations. The good news? Most Wi-Fi problems are preventable - with planning, validation, and continuous tuning.

Whether you’re designing for a warehouse, school, hospital, or hospitality venue, the fundamentals stay the same: know your environment, reduce complexity, and **design for client experience - not signal bars**.

If you're struggling with poor performance or planning a new deployment, let’s connect.

I regularly help customers turn underperforming networks into high-performing platforms ready for 2025 and beyond.

#WiFiDesign #WirelessBestPractices #WiFi6 #WiFi6E #WiFi7 #NetworkEngineering #RFMatters #80211ax #6GHz #WiFiOptimization

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