6 GHZ & REGULATORY

Narrow Channels in 6 GHz Cost You Coverage

By **Keith Parsons, CWNE #3** · 2026-07-22 · originally on LinkedIn

Going narrow in 6 GHz to get "cleaner" channels quietly throws away coverage. If you drop from a wide channel to 20 MHz for less contention, your clients land weaker and roam later. That is a coverage decision, and most people make it without knowing they made it.

Here is why. In 6 GHz, your EIRP is not a flat per-channel ceiling like the old bands. It is governed by power spectral density, a limit measured per MHz. Total radiated power scales with how many MHz you light up.

So a narrow channel is legally quieter than a wide one at the same PSD ceiling. The gap between 20 MHz and 160 MHz:

$10 \cdot \log_{10}(160/20) = 10 \cdot \log_{10}(8) \approx 9$ dB

That 9 dB is 8× less power radiated, the same 8× you saved in channel width, spent straight out of your link budget.

In 6 GHz, channel width is a coverage decision, not only a capacity one. Narrow when the airtime math demands it, but know what the PSD ceiling charges you for it.

This may be especially sensitive when using higher gain antennas, since that extra dB in antenna gain also counts against your max EIRP - and thus lowering your AP's Tx power as well.

When you size 6 GHz channels, are you accounting for the PSD penalty on the narrow ones, or planning coverage as if all widths radiate equally?

By Keith Parsons, CWNE #3, Wireless LAN Professionals. Free to read and share. Facts