NEWSLETTER

The Interactive Spectrum Chart: One Free Tool That Lets You See the Whole Band at Once

By **Keith Parsons, CWNE #3** · 2026-07-02 · originally on LinkedIn

If you teach Wi-Fi, design channel plans, or argue with anyone about 6 GHz, open spectrum.potatofi.com right now and leave it running in a tab. It is a free, browser-based, pan-and-zoom view of the radio spectrum, and it does the one thing every static channel chart fails at: it shows how the bands actually fit together, then lets you manipulate the view yourself. The tool is the solo work of my friend Joel Crane, CWNE #233, the engineer behind the "PotatoFi" handle who builds Wi-Fi tooling at Hamina Wireless. I liked it enough to put him on the podcast to talk about it. Consider this my second public nudge.

What it is

The Interactive Spectrum Chart is a free, interactive visualizer that renders the radio spectrum as a single pannable, zoomable canvas. It opens on 2.4 GHz, showing the non-overlapping 20 MHz channels 1, 6, and 11 sitting next to Japan's channel 14 and a slab of Bluetooth. From there you zoom out and the rest of the world appears: 5 GHz, 6 GHz, the 900 MHz 802.11ah band, and the non-Wi-Fi radios most of us pretend aren't there. Bluetooth, Zigbee, LoRa, DECT, UWB, and cellular all share the same picture.

That last part is what sets it apart. Most channel charts show you Wi-Fi in isolation, as if our spectrum were ours alone. It never has been. Seeing Zigbee and Bluetooth stacked into the same 2.4 GHz real estate as channels 1/6/11 makes the coexistence problem visible in a way no bullet list ever will.

How to use it

There is nothing to install. It runs in a browser, even on old hardware, because Joel built it that way on purpose.

Pan and zoom to the band you care about. Then open the menu and start toggling:

- Regulatory domain: Worldwide, US, EU, Australia, or Japan. Watch the same band change shape as you switch.
- Channel widths: 20, 40, 80, 160, and 320 MHz. This is the fastest way I have seen to explain why 320 MHz channels and crowded spectrum do not mix.
- Subcarrier and Resource-Unit views, down to the 26/67/128 RU detail, plus the PHY layers underneath.

All of which turns an abstract spec table into something you can point at and reason about.

Use it live. Put it on the screen in a classroom or on a design call and show people *why* a channel plan looks the way it does, instead of asking them to take your word for it.

What it is good for

Teaching channel planning, and reasoning about coexistence. Those are the two jobs it does better than anything else free.

The 2.4 GHz overlap demonstration alone earns the bookmark. So does watching an allocation morph as you flip from US to EU to Japan, which makes the "it depends on your regulatory domain" answer concrete instead of hand-wavy. And there is one piece I have not seen anywhere else: an 802.11ah channel chart for the 900 MHz band. Joel says it is the first openly available 802.11ah chart on the internet. He derived it from the 802.11-2020 specification and used an LLM to help verify the channel information. That is his account, and I have no reason to doubt it.

One honest caution, because Joel would want me to say it. Treat the tool as a learning and visualization aid, not a regulatory authority. Channel availability, DFS requirements, the UNII sub-band rules, the 6 GHz power classes, and the 802.11ah allocations all differ by country and they change over time. The "Worldwide" toggle is an illustrative composite, not the ground truth for any one regulator. When you need to commit a specific channel, DFS rule, or 6 GHz power level to a real design, confirm it against the actual regulator for that country. Use the chart to understand the shape of the problem. Use the regulator to sign off on the answer.

Who should use it

Instructors and students working through Wi-Fi fundamentals. WLAN designers explaining a channel plan to people who do not live in the spectrum the way we do. CWNP candidates. Anyone who has ever tried to reason about what is stepping on what across Wi-Fi and the radios next door. It is practitioner-grade and still friendly to a newcomer, which is a hard balance to hit.

Free, and a word on the code

The chart is free to use for reference, education, and yes, entertainment. There is no install, no license, no account.

It is free to *use*, not free to *take*. Joel has asked plainly that people not copy his code or rehost it somewhere else, and that request deserves respect. Run it where it lives, at his site, and point people to the source. Giving a tool away and asking that it stay where you put it are not in tension. They are the same act of generosity, with one reasonable condition attached.

The value

The real value is that Joel took something genuinely hard to represent, overlapping bands and widths and per-region rules that no static chart can render honestly, and turned it into something you can grab and move around until it makes sense. He built it solo, in plain HTML, CSS, and JavaScript, partly to sharpen his own coding, and then he gave it away. That is the spirit I keep pointing people toward: Wi-Fi people building free, useful things for other Wi-Fi people, and making a confusing topic teachable in the process.

Go open spectrum.potatofi.com, switch the regulatory domain a few times, and find the 802.11ah band. When a fellow CWNE builds a free tool that finally lets you *see* the spectrum instead of memorizing it, what is your excuse for still teaching channel planning off a flat image?

Credit where it is due: Joel Crane, CWNE #233, Interactive Spectrum Chart (spectrum.potatofi.com). Free to use; please don't copy or rehost the code.

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