

Apple, Google, Facebook and Microsoft petition FCC for super-fast Wi-Fi tethering

It's rare to see Apple, Google, Microsoft, Facebook, HP, Qualcomm, Intel, Broadcom, and Marvell all on the same side of the aisle, but there's at least one place they publicly agree: they want chips and devices that freely take advantage of a new frontier in Wi-Fi, without pesky licensing or regulatory restrictions – and they're telling the FCC they'll need it to bring next-gen AR/VR glasses and data tethering to you.

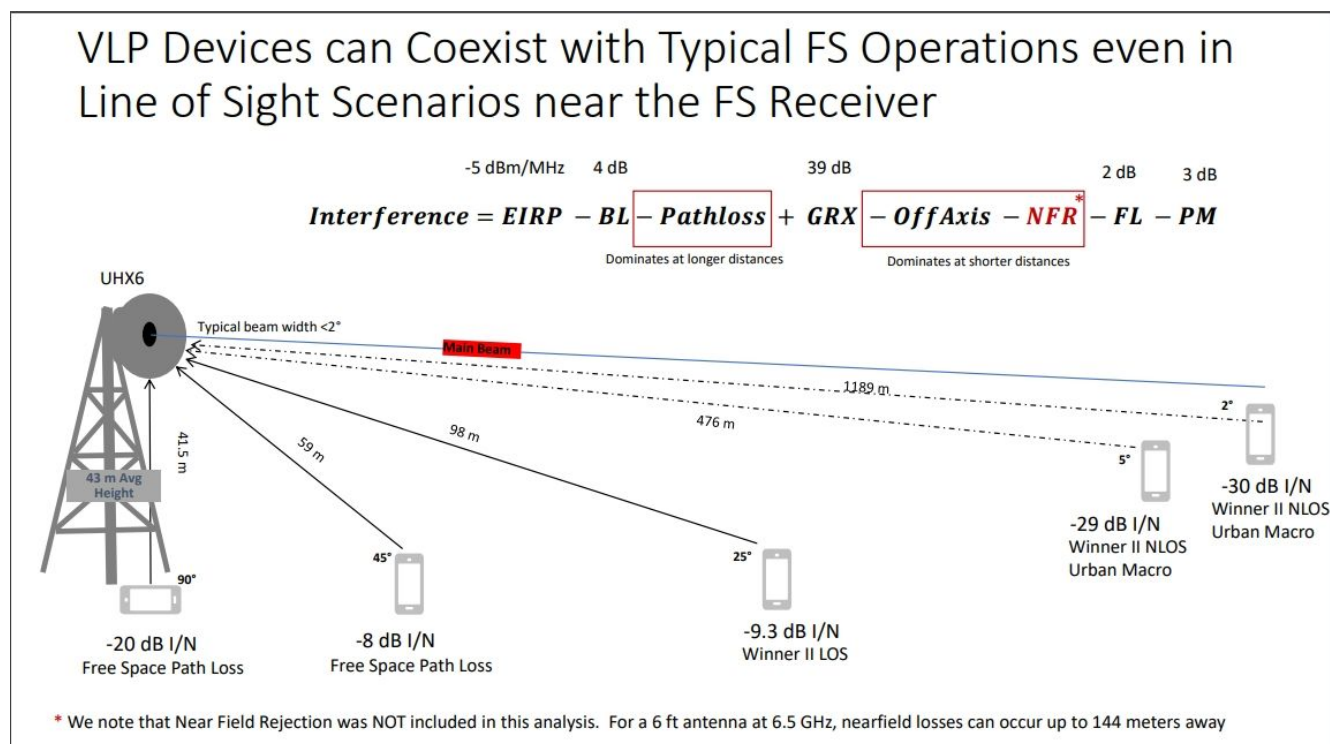
Carriers vs. hardware makers

First, some context. Traditionally, Wi-Fi has been built on top of unlicensed 2.4GHz and 5GHz spectrum, but late last year the FCC unanimously approved opening up the 6GHz band for unlicensed activity as well, providing a huge 1,200MHz chunk of wireless real estate for all manner of devices to communicate without needing to rely on cellular. But that pissed off the cellular industry, not to mention utilities like water and power, which still use some 6GHz microwave antennas for their communication backhaul and say they're worried about interference.

Instead, carriers would prefer the FCC auction off a big chunk of 6GHz they can snap up for additional cellular, which they argue the US needs to be a leader in 5G.

Obviously, Wi-Fi chipmakers and hardware manufacturers don't want just *part* of the 6GHz spectrum, so they're pushing hard with potential solutions for that interference worry. One is a technique called Automatic Frequency Coordination (AFC), which could theoretically detect and stop harmful interference... but requires that Wi-Fi devices be registered in a database, which they say might be a bit of work.

So now, these nine tech giants are petitioning the FCC to approve a new Very Low Power (VLP) category of Wi-Fi where small, low-power devices like smartphones that transmit below a certain power threshold (14 dBm EIRP) could traverse the 6GHz spectrum without restrictions or worries, according to a letter unearthed by *Wi-Fi Now*.



Basically, it's saying your typical legacy microwave antenna is so high off the ground, fires so narrow a beam, that your typical low-power smartphone won't interfere even in places you'd suppose they might.

Image via FCC

We'd be talking about short-range, point-to-point connections between two devices – think within a room, not across your house. The letter suggests they could deliver 2Gbps at a distance of 3 meters.

Make sense so far? Here's where things get weird: Just like the cellular industry, these nine tech giants in the Wi-Fi camp are arguing their cause is important for the proliferation of 5G. They say devices like AR glasses, VR headsets and in-vehicle entertainment need fast Wi-Fi data tethering (presumably to your phone or another mobile hotspot) to take advantage of 5G speeds.

6 GHz Very Low Power Portable Devices Required for Ultra High Performance Applications



Mobile AR/VR



UHD Video Streaming



High Speed Tethering



In-Vehicle Entertainment

- 5G mmW enabled handsets already in the market can deliver ~ 2 Gbps
- For American consumers to derive the full benefit of mmW 5G, peripheral devices such as AR/VR goggles, mobile hotspot, etc. will be required
- VLP devices can provide ~2 Gbps throughput for 160 MHz transmission with sub-ms latency at 3 meters

“High Speed Tethering” is presumably how these other three use cases will work, too.

Image via FCC

The title of the group’s letter to the FCC: “The FCC can Accelerate 5G Services while Protecting Incumbent Operations by Enabling Very Low Power Portable Class Devices in 6 GHz.”

It’s interesting because Apple and Facebook haven’t actually released or even necessarily announced their AR headsets yet. We’re still waiting for smart glasses to materialize, period, so it’s a little early to suggest they’ll be a driving force in 5G. And it’s interesting because presumably, any of these devices could integrate its own 5G cellular modem to connect to a 5G network directly, cutting out the Wi-Fi middleman.

Personally, I do believe Wi-Fi might make more sense, because cellular devices drain their batteries faster, and because carriers love their per-device monthly fees. I haven’t seen any indication that 5G will convince any of them to let me add a tablet or watch to my plan without coughing up that extra \$10 a month. That’s why mobile hotspots and tethering are great, and it’s true that VR and AR headsets could benefit from the lower latency that 5G and Wi-Fi 6 are promising, if you combine cellular with a short-range Wi-Fi tether.

My question: Will the FCC will be swayed by the argument that we need more 5G devices, or that we need more devices connected to 5G?

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