Unlicensed signal boosters get a boost from Amazon

Enlarge / You really can find anything in a stock image library: “Antennas of mobile cellular systems with Wi-Fi hot spot repeater and blue sky.”
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Cell phone signal boosters are powerful devices. Installed in a home or office, they can potentially amplify one signal bar into five. In rural areas with poor cell coverage, or in buildings where signals have trouble penetrating, they can be lifesavers, providing reliable access to communication networks and emergency services.

But boosters also have a dark side: If misconfigured or poorly manufactured, they can knock out service for everyone who happens to be nearby. That’s why the Federal Communications Commission began regulating the devices five years ago. Today, all consumer signal boosters sold and marketed in the United States must meet the agency’s strict technical standards. Doing so can get expensive, and many FCC-authorized boosters cost hundreds or even thousands of dollars. Ecommerce sites like Amazon offer cheaper options. The only problem is, they’re not always compliant.

The FCC requires booster manufacturers to get their products certified as safe, and it publishes each valid certification on its website. WIRED found a number of sellers offering boosters on Amazon that are not listed as certified by the FCC. Their models often cost less than $200, compared to $300 or more for FCC-certified versions. A number of them have been top sellers in the signal booster category, and some are promoted with a badge reading “Amazon’s Choice.”

“We’ve reached out to Amazon multiple times to inform them that these products are not legal for being sold in the US,” says Laine Matthews, the vice president for business at SureCall, an American signal booster manufacturer. “And it hasn’t yielded results.” Amazon removed some listings after WIRED reached out for comment this week.

Uncertified signal boosters are sold on other websites, but Amazon is by far the largest ecommerce platform where US consumers can purchase them. The company still dominates online shopping in the US, and it’s so successful in part because of the millions of independent merchants who also sell goods on its marketplace. But lawmakers, consumer advocates, and other businesses have raised concerns about Amazon’s oversight, and problems like counterfeit items. The company has rolled out some programs designed to police third-party vendors, but they don’t catch everything. A recent *Wall Street Journal* investigation found thousands of items for sale that were unsafe or banned by regulators. FCC-noncompliant signal boosters similarly pose risks. They can be an enormous nuisance to wireless carriers who have to track them down, and when they disrupt service, people might not be able to reach 911 in an emergency.

“Selling partners are required to comply with all relevant laws and regulations when listing items for sale in our stores,” an Amazon spokesperson said in a statement. “Those who do not will be subject to action, including potential removal of their account. The products in question have been

removed.” WIRED had sent Amazon a list of the vendors it discovered, rather than individual product listings. As of publication time, all six sellers could be found on its website selling signal boosters. When asked about this, Amazon responded with another statement: “We use a variety of methods to ensure that the products sold in our stores are compliant with applicable laws and meet our Amazon polices [sic]. We expand these tools every day, and our dedicated teams constantly review and refine our policies.”

The FCC did not return a request for comment.

Amazon’s booster bazaar

Sina Khanifar wasn’t surprised when the booster he ordered on Amazon recently turned out to be unauthorized. He’s the cofounder of RepeaterStore, which also sells boosters online, including on Amazon. The model he says he ordered, a 700MHz booster from a company called Anntlent, came with a certification, but for an entirely different product. Still, the item was labeled “Amazon’s Choice.” (Lawmakers have asked Amazon to explain how it makes this designation.)

If Khanifar tried to register the unauthorized booster with his carrier, it may not have permitted him to use it. The FCC requires everyone register their boosters—including older models purchased before its rules went into effect in 2014 and were grandfathered in. If Khanifar ran the booster anyway and it caused interference, his wireless carrier or the FCC could come to his house and ask him to shut it down. Either way, it would mean he spent nearly $200 on a device he wasn’t permitted to actually use.

Khanifar believes Amazon could be doing more to help consumers. “Amazon should at least require people to list the FCC ID on the page very clearly,” he says.

WIRED found six third-party vendors on Amazon selling signal

boosters that when cross-referenced with the FCC's database appear to be unauthorized, including KKBSTR, SH·W·CELL, HJCINTL, Phonelex, Subroad, and MingColl. Each one had associated trademarks registered to an individual or company located in China.

Many sellers were appropriating reviews from other Amazon products, a common tactic used by sellers to make their goods appear more popular than they actually are. "This is the second time I purchased these curtains. I love them," one reviewer supposedly said about a Phonelex booster, for example, that has since been removed. On the Amazon page for a since-deleted HJCINTL device, a number of reviews referenced replacement wheels for rolling suitcases. One five-star review of a SH·W·CELL booster said "I absolutely love my new bling case for my iPhone 7 plus!" The manufacturers themselves are difficult to reach, and don't appear to have company websites.

In reviews that appeared to actually be about signal boosters, some customers noted the boosters had caused interference issues. "ATT service tech knocked on my door and said this unit screwed up three cell towers in my area," one review for a MingColl device reads. "He said it was not FCC passed and was a bootleg from China." In a one-star Amazon review of a booster from the company Phonetone, that has since been removed from Amazon's site, a man named Scotty Wideman said that a representative from AT&T came to his house and "informed us this booster was interfering with their tower and if we didn't turn it off the FCC would be contacting us." AT&T declined to comment.

"Improperly configured signal boosters can affect mobile networks, which is why we encourage customers to contact us for help finding a solution that works, like our free Personal CellSpot with unique software that won't interfere with the broader network," a T-Mobile spokesperson said in a statement. Sprint didn't comment in time for publication.

Legitimate manufacturers say they have tried alerting Amazon to the noncompliant boosters on its marketplace for over a year. “It creates a bad name for our industry and it takes away sales for companies that are doing the right thing,” SureCall’s Matthews says. He says he has tried contacting Amazon numerous times, including sending a letter to the company’s legal department, but has only received boilerplate responses in return. Khanifar, the other booster seller, says he has also reached out to Amazon and received no response.

The issue isn’t limited just to the US, either. Earlier this year, the Cellular Operators Association of India, a trade group representing the wireless industry, asked Amazon and other ecommerce sites to stop selling illegal signal boosters, according to local news reports. In a letter sent in response, Amazon argued that sellers and buyers were responsible for any legal obligations, and that it was merely functioning as a marketplace. This is a common refrain from the company.

Can you hear me now?

Dennis McColl has been at Verizon for over 20 years. As an associate fellow in its radio frequency systems group, which is responsible for solving issues like network interference, he says he’s seen plenty of noncompliant boosters. They can cause two types of problems. If the two ends of the device aren’t far enough apart, they can get into a feedback loop, like what happens when a microphone gets too close to a speaker, which causes the booster to malfunction.

The bigger issue for carriers is thermal noise, a byproduct the boosters give off. Signal boosters “take this thermal noise and amplify the bejesus out of it,” says McColl. “If it’s really far away, then all of this noise is dissipated before it gets to the cell site.” But if a booster is too close to a cell tower, that excess noise can cause massive interference, since it’s been amplified thousands of times. It

makes calls drop, and other people in the area lose service.

The rules enacted by the FCC in 2014 were meant to prevent this. The new Network Protection Standard it introduced is “a series of technical safeguards designed to minimize potential for Consumer Signal Boosters to cause interference in wireless networks.” It requires boosters to automatically shut down when they get into a feedback loop, as well as when they’re too close to cell towers, among other restrictions.

But outdated signal boosters are still out there, as well as illegal ones purchased on sites like Amazon. That means Verizon and other carriers continue to discover them causing interference, typically when engineers notice an unusual uptick in things like dropped calls in a certain area. Sometimes when Verizon builds new wireless infrastructure, McColl says, it discovers new boosters that until then had been too far away to cause problems. Technicians then have to go into the field and decipher where the problem is coming from. McColl says he’s knocked on hundreds of people’s front doors and asked them politely to please turn off their noncompliant boosters. “I always approach it as if you’re making friends.”

This story first appeared on Wired.com. Is there something about Amazon you think WIRED should know? Contact the author at louise_matsakis@wired.com or via Signal at 347-966-3806.

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