

Time for churches to "come to Jesus" on illegal wireless mics

By Nate Anderson | Last updated January 22, 2010 6:33 AM



It's Judgment Day for churches and other wireless microphone users. Come June 2010, wireless mics will have to abandon the popular 700MHz band, where many have been squatting without authorization.

Churches have known for some time that this was coming, but that hasn't kept some of them from denial. Last year, before the clear-out date was finalized, articles on the topic began appearing in outlets like *Your Church*.

As the music director for a California church put it, "I've heard rumblings about this, but at this point have not worried about it. I have a hard time believing that they would pass a law that would obsolete everything that's been out there, but who knows? I guess I'm sort of treating this like the Y2K scare; I didn't believe that either."

It's time to start believing; the FCC has [set a June 12 cut-off day](#) (PDF) for wireless microphone usage in the 700MHz spectrum block.

How we got here

The FCC has authorized three main ways to legally use a wireless microphone.

- **Part 90.** Part 90 mics operate between 169-172MHz, they require a license, and they are available to businesses, churches, schools, and hospitals.
- **Part 15.** Part 15 mics are unlicensed, so anyone can start using one without permission, but unlicensed bands are overrun with noise. Common bands available for use include 49MHz, 902-928MHz, and 2.4GHz. If you've used an analog cordless phone or baby monitor in the 900MHz or 2.4GHz range, you'll know why mic maker Sennheiser says this is "generally unsuited to professional application."
- **Part 74.** Part 74 wireless mics must be licensed and are only available for use by news outlets, low power TV stations, and motion picture producers. These mics can operate in the prime TV bands, however.

When you understand that many popular wireless mics sold over the last decade are 1) being put to unlicensed use 2) used by churches, schools, and sporting venues 3) and transmit in the same 700MHz frequency space as over-the-air TV broadcasts, one problem becomes clear; such uses are not actually covered by any of the three categories above, and the mics are not being used legally.

This might not sound like a big deal—it happens every week and seems to be hurting no one—and it wasn't until the DTV transition came along. As part of that process, the FCC committed to clearing the upper part of the TV bands between channels 52 and 69, otherwise known as 698-806MHz—the "700MHz band."

This prime spectrum has terrific propagation characteristics, which is why TV signals can travel up to 100 miles and easily penetrate walls. This is also why it was so desirable for wireless mic use, but when the FCC [auctioned off the 700MHz spectrum](#) for \$19 billion in 2008 (Verizon taking the largest national block), auction winners didn't want to be competing with the interference from wireless microphones.

Which leads us to last week, when the FCC issued its formal order clearing out the 700MHz band. The TV broadcasters, some of whom switched channel assignments temporarily as part of the DTV transition, have now retreated to below channel 52. That leaves wireless mics alone in the 700MHz band, and not just a few mics—one spectrum advocacy group claimed that there could be more than one million unlicensed mics out there.

This raises an uncomfortable question: just how did all those mics get marketed and sold to groups that couldn't even qualify for a license? The FCC only has records on 958 active Part 74 licensees (and most aren't even in the 700MHz band), but the devices are clearly being used by tens of thousands of groups. Since so much use is unlicensed, though, the FCC has no records of who is using what and where, and it has no way to contact users directly about the change.

The Public Interest Spectrum Coalition argues that the mic makers knowingly marketed their products to groups who weren't allowed to use them. In their words, the mic makers were "willfully and knowingly marketing and selling wireless microphones to unauthorized users for ineligible purposes in violation of Part 74, Subpart H, and for engaging in deceptive advertising practices designed to persuade ineligible users such as houses of worship, theaters, corporate event venues, and members of the general public that they could legally purchase and operate wireless microphones operating on vacant broadcast UHF Channels without a license and for purposes prohibited by the Commission."

But, as one mic maker argued to the FCC, "marketing and selling that device to ineligible and/or unlicensed parties is not illegal."

The FCC isn't currently taking sides on the issue, though it did launch an investigation last year into the marketing practices that led to the current difficulty. It's also requiring mic makers to include clear point-of-sale notices about licensing on their devices.

Here's what we're gonna do

In its Solomonic wisdom, the FCC has decided to clear the 700MHz band by June 12, 2010—one year after the DTV switchover became official. By that date, all churches, Broadway shows, football stadiums, and schools will need to make sure that their wireless mics do not broadcast in the protected band. If you recently bought expensive 700MHz gear that doesn't work in other frequencies, tough—the government is not handing out any cash in compensation. If you did have a license, tough—you'll need to move anyway.

But what the FCC will do is allow all of those users in the 700MHz band, even the squatters, to slide down the spectrum scale a bit and get legal. The agency is opening up the remaining TV bands below channel 52 to Part 15 unlicensed use by wireless microphones, so those whose mics work in a wide range of frequencies will probably be all right without spending any more money. Everyone else needs to buy new gear or go wired.

This move raises a host of other issues, among them the fact the wireless mics aren't the only unlicensed users of the TV bands. The so-called "white space devices" which will enter the market over the coming year will also operate in the same spectrum, and at much higher power. (The FCC is limiting wireless mics to 50mW of power output.)

Still, it's probably a good solution given the huge number of mics already in the wild and the fact that many belong to noncommercial entities like churches and schools. But the FCC is clear that the new unlicensed use in the "core TV bands" is itself a temporary waiver of the rules; now that the 700MHz band is being swept out, the agency will start thinking about how to handle the wireless mic issue once and for all.

"We stress that these waivers are temporary," says the FCC, "and that the granting of these waivers will not prejudice the outcome of this proceeding or otherwise limit the Commission's choices therein." In other words, wireless mics could well be booted from the core TV bands altogether at some point in the future, so don't get too comfortable.

Wireless mic vendors have already stopped producing 700MHz mics for the US market. If you're curious about whether the mics owned by your particular organization will have to change frequencies—and whether they are capable of doing so—the FCC has a [complete list of wireless mics](#) that are affected by the clear-out.

Several microphone vendors, including [Sennheiser](#) (PDF) and [Shure](#), have launched rebate programs to help organizations purchase new gear.