

# Here's Why You Can't Have 5G Right Away

By: Wayne Rash | October 09, 2019 - eWeek

eWEEK TREND ANALYSIS: Despite all the hype we hear from carriers, you're not likely to see a 5G signal on your phone for a year or two, at best.



You've seen the 5G hype. It's hard to escape, what with TV commercials, radio spots and email ads pitching it, and with too many articles in too many places making it sound like this wonderful new form of high-speed communication is on your doorstep. And to some extent it is, provided you're located in one of about two dozen very small locations scattered around the U.S. But for everyone else, 5G remains a distant dream.

Part of the reason this new form of wireless communications gets so much attention is because it promises very high speeds with very low latency, roughly equivalent to what you'd get with a decent fiber connection. And because it's wireless, you don't need to bother with that fiber. But that performance comes at a significant cost in terms of both money and resources, and dealing with those costs means that a full, nationwide deployment in the U.S. is still years away.

But the lure of 5G is here now. This is why carriers want you to think that it could arrive in your area nearly any minute. This is probably why AT&T phones are now sporting a 5GE symbol when they're really using 4G LTE (Long-Term Evolution). This is why T-Mobile is coupling its new 600MHz band with 5G readiness. Everybody wants 5G, but they're not going to get it--at least not now.

According to Dave Bolan, core industry analyst at the Dell'Oro Group, current 5G deployments are extremely limited. In a presentation delivered at the [NetEvents](#) Global IT Summit in San Jose, Calif., most of the deployments are tiny and mostly serve as proof that the technology exists, and to be used as test platforms. The biggest deployment is at 13 NFL stadiums, using millimeter wave signals.

## 5G Delivers Network Bandwidth as Promised

Bolan said that the high frequencies used by millimeter wave radio are what's required to provide the high-bandwidth data promised by 5G. He said that current 5G technology uses non-standalone communications. "The non-standalone means that the 5G network is tied to the LTE network," Bolan said in a subsequent interview with eWEEK.

What's not hype is that the 5G technology actually does work, and it provides the network bandwidth its proponents say it will. But the ubiquitous coverage promised by carriers is still years away. This is why today's devices are also tied to the 4G LTE networks provided by

their carriers, because when there's no 5G signal available, they can still operate using LTE.

There are a few reasons why you're not seeing more in the way of 5G deployments. The first is that the standard isn't finished. That will happen when Release 16 arrives next summer. This new release will allow devices to support stand-alone 5G, when support for extremely low latency arrives. In addition, the new chipset for 5G modems, the Qualcomm Snapdragon X55, which supports dynamic spectrum sharing and stand-alone 5G, will be available. Until then, devices that completely support 5G won't be available.

Right now, there's one phone, the Samsung Galaxy S10 5G, that's available. Other makers are holding off until next year. The reason Samsung is able to provide a phone is because 5G deployments are far along in South Korea, where Samsung is based.

## 5G Means More Than Just Phones

But more than just phones are involved with 5G deployment. One critical factor is the build-out required for 5G cell sites. Because of the very short range and poor penetration of millimeter wave radio signals, most estimates say that there will need to be 10 times as many 5G cell sites as there are 4G LTE cell sites.

To some extent, Sprint and T-Mobile will be able to leverage existing cell sites because they're also planning 5G use in existing 2GHz and 600MHz frequencies in addition to millimeter wave frequencies. Those frequencies provide longer range and better penetration, but at the cost of less bandwidth. On the other hand, T-Mobile's 600MHz 5G is the only one that allows coverage in currently underserved rural areas. Adding to the potential delays deploying 5G is the requirement in the United States that carriers have to get approval of local or state governments before they can build a cell site. Depending on the locality, this can add significant delays. In some cases, this can prevent 5G deployment entirely. The FCC is attempting to adopt rules

that prevent localities from stopping 5G deployment, but those rules are still in the works.

If there is a bright spot, it's that the non-standalone radios being put into today's devices offer some useful capabilities. "The dual connectivity is very clever for deployment because you get the capacity of both networks," Bolan explains. This way, when you're in an area where 5G is available, you can use it if you need it, but otherwise you still have LTE. He added that 4G LTE is working very well right now and is meeting nearly everyone's needs--except where extremely low latency is required.

Right now, it appears that nationwide 5G coverage will be mostly in place by late 2020 or maybe 2021. However, there are sure to be gaps, just as there are still gaps in the nationwide 4G LTE coverage. Speaking to this, Bolan reminds us that it took 10 years to deploy LTE so that it was mostly nationwide. He expects 5G to take another 10.

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