

Testimony of

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on

Strengthening American Leadership in Wireless Technology

before the U.S. House
Committee on Energy & Commerce
Subcommittee on Communications and Technology

January 23, 2025



Chairman Hudson, Ranking Member Matsui, members of the Subcommittee, on behalf of CTIA and the wireless industry, thank you for the opportunity to testify today.

CTIA thanks this Subcommittee for its bipartisan commitment to crafting sound spectrum policy for our nation’s future. I last testified on this topic before the Subcommittee in early 2023 in the midst of the debate around renewing FCC auction authority and identifying more spectrum to meet the needs of American households. Fast forward to today, and we remain in that same place. In the interim, we have lost two critical years to move our country forward.

This Committee has played a unique role in previously driving U.S. wireless leadership and innovation. We need your collective leadership again. And we need it urgently. The wireless industry can play a key role in addressing many of the core challenges facing our country today—from helping families with everyday household costs and creating more good paying jobs to competing more effectively against China and connecting all Americans. All of this is dependent upon access to more spectrum, specifically full-power licensed 5G mid-band spectrum. We urge you to swiftly restore FCC auction authority with a clearly defined pipeline of future auctions for our nation’s economic and national security.

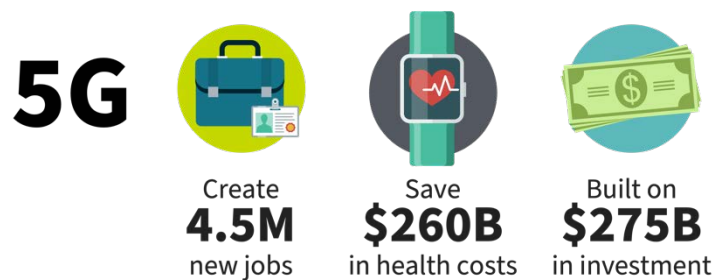
Wireless Creates Opportunity Across America.

Wireless is a uniquely American industry that has helped reshape our economy and U.S. global leadership. The first phone, the first call, and countless other firsts happened in the U.S. because of the close partnership—and commitment—of the U.S. government and wireless industry to lead. Today, 5G wireless networks blanket the nation covering over 330 million Americans who benefit from multiple competitive options offered by national operators, regional providers, and resellers.

The wide availability of 5G is the result of record-breaking investment. Wireless providers—including AT&T, EchoStar, T-Mobile, UScellular, and Verizon—invested more than \$30 billion in 2023 alone, and over \$215 billion since 2016. In this, we lead the world: U.S. wireless network

investment accounted for 23 percent of the world’s total wireless capital expenditures even though the U.S. has just 4 percent of the world’s population. The wireless industry is proud to be one of the two largest investors in America’s economy.

And we are just getting started: this platform is driving new investment and innovation. Boston Consulting Group projects 5G will be a powerful engine for our nation’s future



economic growth by adding \$1.5 trillion to our economy and 4.5 million new American jobs this decade. The benefits are more than economic. PwC projects over \$260 billion in health savings thanks to 5G adoption and innovation. We already see 5G unlocking new innovations in agriculture, defense,

transportation, manufacturing, and so much more. Smart manufacturing is increasing employee output by 120 percent, helping pave the way for a U.S. manufacturing renaissance. We also see entrepreneurs starting new companies leveraging the power of 5G to improve their communities.

All of this is dependent upon spectrum policy keeping pace with the needs of consumers and enterprise. Wireless networks rely on licensed spectrum sold at auction by the FCC to deliver the reliable services Americans demand. Since Congress first authorized the FCC to conduct spectrum auctions back in 1993, the United States has led the world in spectrum policy and exported that policy across the globe. Those auctions have also raised over \$233 billion for the U.S. Treasury and helped fund key Congressional priorities. They have also helped launch massive cycles of U.S. investment and innovation to the benefit of U.S. consumers.



5G will make American farms more productive, American manufacturing more competitive, and American healthcare better and more accessible.

— **President Donald Trump**

5G Home Broadband Drives Consumer Value and Closes The Digital Divide.

The advanced capabilities and speeds of 5G unlock the ability of the wireless industry to provide new services, including a real competitive alternative in the home broadband market. 5G home broadband is a plug-and-play connection with 15-minute self-installation that delivers home broadband available in your house. This new service is having profound positive effects across the country.

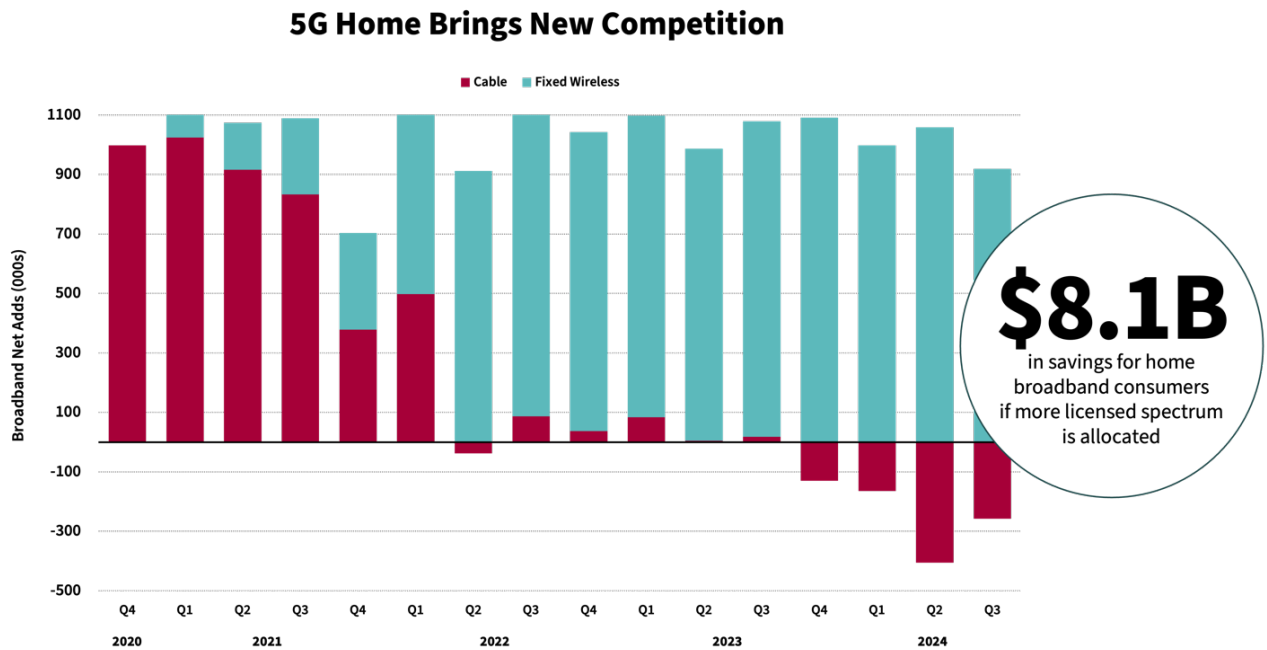
First, the ability of 5G home to be deployed quickly in remote and rural areas has made a real impact in closing the digital divide. The wireless industry has long been proud to be the onramp to the Internet for millions of households, and, today, for 24% of non-college educated Americans, their smartphone is their only connection to the Internet. 5G home has only amplified and expanded those efforts. Almost one-fifth of 5G home broadband subscribers are new to broadband altogether and one provider reports a third of their customers are coming



~20% of new 5G home subscriptions are new to broadband altogether

from rural America. Because of the ease of deployment for both consumers and operators, 5G is making a real impact in creating connectivity options in unserved and remote areas.

Second, 5G home is bringing the competitive American spirit of the mobile market to the home broadband market, and this service will only get more powerful with access to more spectrum. For years, cable companies dominated the home broadband market (in red below). The introduction of 5G home broadband offerings (in teal) is changing that. 5G home is the fastest growing broadband connection in the nation. 5G home supports consumers’ speed needs, is cost effective, and is easy to install. Indeed, CNET noted that “the affordable, straightforward pricing is vastly appealing and it’s what jumps off the page.” Over the past three years, 5G home accounts for 99% of all broadband net adds.



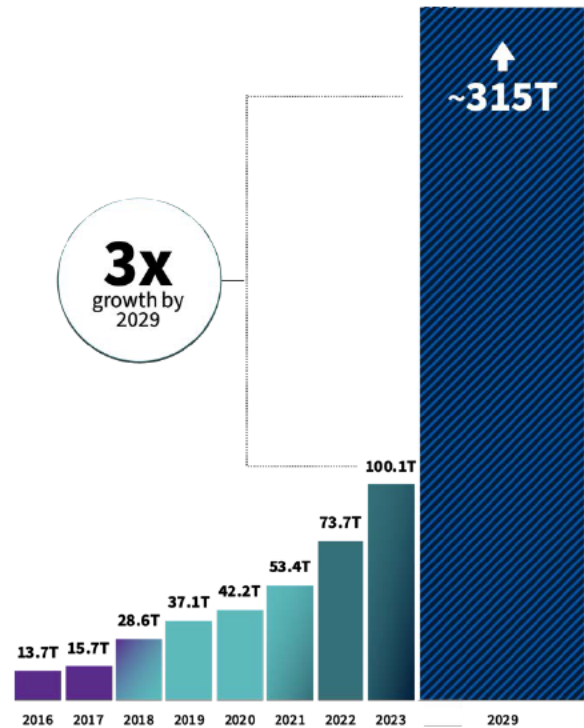
The challenge that 5G home broadband faces today is the limited supply of available spectrum, which is constraining this service’s full impact; one operator already reports a 1 million customer waiting list. A recent report estimates more spectrum could expand the service and help save consumers \$8.1 billion annually.

America’s Exploding Demand for Wireless

New 5G uses cases—as well as America’s ever increasing reliance on smartphones and other wireless devices—are driving extraordinary traffic growth on wireless networks. When I last testified, I noted a then-record of 53 trillion MBs carried on mobile networks. Today, just two years later, that number has almost doubled to over 100 trillion MBs, and we have had to meet that record growth without the benefit of any new spectrum. Looking ahead, consumer usage will drive continued record growth with **over 3 times the traffic** carried on wireless networks by the end of the decade.

To keep up with the needs of American consumers, the wireless industry will continue to invest tens of billions of dollars every year building denser networks in more communities with a mix of traditional cell towers and new small cell technologies. We will also use more efficient technology to be good stewards of the spectrum available to our industry today. The wireless industry is 42 times more efficient as a spectral user than we were just a generation ago. Absent an infusion of new spectrum into our industry, network investment and spectral efficiency alone will not be sufficient. We will see the impact first in high-traffic areas in as little as two years as our spectrum deficit will reach 400 megahertz in 2027 and grow to over 800 megahertz in 2029. By acting now, Congress can prevent any consumer disruption and ensure future innovation is supported. For so many enterprise connectivity solutions reliability in terms of connection, speed, and latency is critical, and soon at risk.

Wireless Growth Skyrocketing



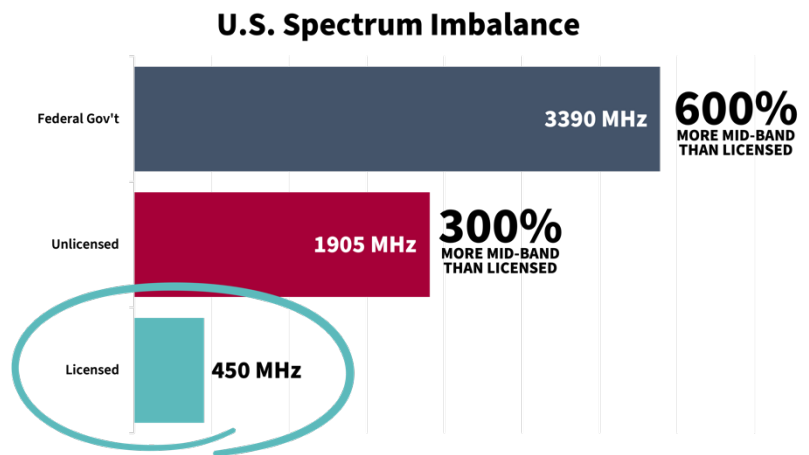
The Mid-Band Access Dilemma: Today's Unbalanced U.S. Policy

The key spectrum being used for 5G around the world is mid-band spectrum, roughly 3 to 8.5 GHz, and the United States currently is falling short in terms of access. As new FCC Chairman Brendan Carr has warned “[t]he U.S. sorely needs more licensed mid-band spectrum now for commercial use to keep pace with consumer demand and our geopolitical rivals.” This is an area of long-standing bipartisan agreement. Former FCC Chairwoman Jessica Rosenworcel similarly championed the need for more U.S. mid-band access because it is the “ideal blend of capacity and coverage ... key to delivering on the promise of 5G services and ... reach[ing] as many people as possible.”

Congress in bipartisan fashion took significant steps in 2018 and 2021 to jumpstart commercial access to full-power mid-band spectrum resulting in the C-Band and 3.45 GHz auctions. The first Trump Administration worked across agencies on a system-by-system basis to identify the government-held 3.45 GHz band for future wireless use. Together, these two auctions raised over \$100 billion in winning bids from a wide array of national and regional providers as well as new entrants. This reflects the extraordinary need for mid-band spectrum, and that spectrum was quickly put to use to serve Americans.

Despite those initial efforts, however, there is a significant imbalance today in U.S. spectrum policy with respect to how mid-band spectrum is allocated between different types of users. Federal government agencies today have 600% more spectrum than 5G. There is also 300% more spectrum dedicated to unlicensed/Wi-Fi use than 5G,

including 1,200 megahertz of spectrum given to Big Tech, cable companies and other users in 2020. Together, we can find a better balance that enables government agencies to meet their missions—including national defense—while enhancing and expanding commercial access. The challenge we face today is the FCC does not have the tools to address this disparity. There are no auctions of new nationwide spectrum planned, and the FCC has even lacked the general authority to auction spectrum since 2023.



U.S. Economic and National Security at Risk Without Mid-Band Spectrum

Our global rivals have seen decades of U.S. wireless leadership and are aggressively moving to meet their own domestic demand and take the lead in the development of the industries of the future. They are taking action now to get ahead of skyrocketing wireless use by freeing up more 5G spectrum.

Today, the U.S. has a global deficit of almost 200 megahertz of licensed mid-band spectrum (twice the size of the most recent 3.45 GHz auction) compared to our key allies and rivals. Japan today has over 1,100 megahertz assigned, and the United Kingdom almost 800 megahertz.

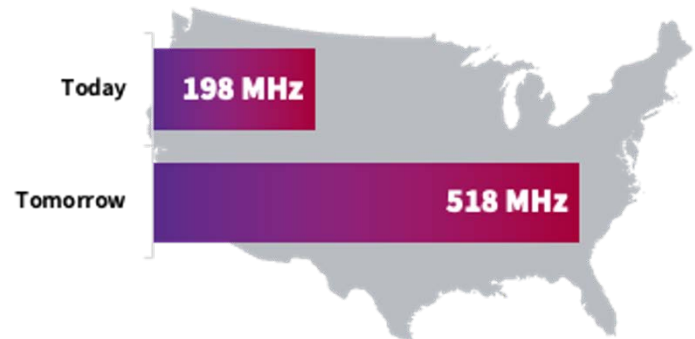
This global dynamic is further complicated by our rivals' plan for even greater access by 2027 when our deficit is estimated to exceed 500 megahertz. To close that gap (and meet the needs of U.S. consumers), the U.S. will need to roughly double the amount of commercial mid-band spectrum it has available today. FCC Chairman Carr has cautioned that "while America is standing still, our global competitors and adversaries are passing us by."

China is a prime example. A few years ago, the efforts by Congress brought the U.S. roughly even with Chinese operators in terms of spectrum access. Since then, however, China has continued to move aggressively and is poised to have as much as 1,600 megahertz of licensed mid-band spectrum by 2027. That spectrum advantage can be marshalled to drive new innovation and use cases across the Chinese economy. For example, China today has 14x more 5G-enabled factories than the U.S.

The Center for Strategic and International Studies (CSIS) warned that "the mid-band spectrum gap is a significant national security problem ... facilitat[ing] China's ambitions to shape twenty-first century technologies."

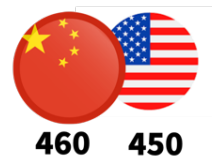
We see the same trend in terms of 5G availability. The U.S. was an early leader in getting 5G in the hands of U.S. consumers, but the last few years of

U.S. Spectrum Deficit

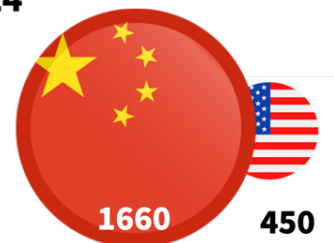


China's Mid-Band Advantage

2021



2024



Projection of amount of mid-band spectrum available in 2027

governmental inaction have given China an opening. China has now overtaken the U.S. in terms of 5G availability providing their own domestic advantage.

China is also seeking to export their advantage and build new wireless ecosystems with Chinese equipment around the globe in Africa, Asia, and elsewhere in bands currently unavailable in the U.S. The U.S. so far has been unable to offer a competing global vision for spectrum policy or successfully link its spectrum policies with its allies. This risks a divide in terms of our country's global influence over future technologies, and the benefit of globally scaled solutions. Accenture projects \$200 billion in U.S. economic growth is at risk if the U.S. is unable to build global ecosystems around spectrum and network equipment. The Atlantic Council warns of a "bifurcated 5G world" where China "set[s] the global standard." This Committee is best positioned to address this global deficit now and provide our allies a U.S.-backed vision to counter China's plan.

Congress Can Replicate Its Past Success

Reauthorization of the FCC's auction authority is key to maintaining America's wireless leadership. The lessons of the 1997, 2006, and 2012 FCC auction authority extensions demonstrate the critical role of Congress directing spectrum policy through packaging extensions of authority with designated future FCC auctions. In each of those instances, Congress mandated specific auctions along with extending the FCC's

authority. Congress' last extension directed the FCC to hold the then-record breaking AWS-3 auction, the 600 MHz broadcast incentive auction, and the H Block auction. Depriving the FCC of auction authority will stunt 5G growth, impede U.S. investment and innovation, and send our international rivals a dangerous message about U.S. wireless leadership.

It is in our nation's economic and national security interest to identify a pipeline of bands to be auctioned for licensed wireless use. The Committee is uniquely situated to address this shortfall, and this effort should focus on our licensed mid-band deficit in a manner that ensures key government spectrum-based services are preserved, if not enhanced, with new more efficient state-of-the-art technologies and systems. The Department of Defense and other agencies are important users of spectrum, and must continue to have access to sufficient spectrum to deliver mission critical services. But



If China dominates 5G and 6G, no defense system can protect America...The U.S. is becoming an isolated spectrum island with lack of licensed spectrum to compete on the critical ... technologies of the future.

- FCC Chairman Brendan Carr

as with any scarce resource, there is a good-government obligation to use that spectrum efficiently. We are confident that with this Subcommittee’s direction, we can identify opportunities for win-win scenarios benefiting both commercial and government spectrum users.

The good news is there are a number of solutions available for Congress, the Administration, and the FCC to meet the projected 400 megahertz deficit by 2027. Specifically, the Biden Administration identified the lower 3 GHz band (3.1-3.45 GHz) and the 7/8 GHz band (7.125-8.4 GHz) as the two most promising global bands for future commercial use. Congress previously identified the lower 3 GHz band as well. The U.N. has also identified two additional bands for future global 5G use including the 4 GHz band (4.4-4.94 GHz) and the upper half of the 6 GHz band (5.925-7.125 GHz). While the U.S. has dedicated the entire 6 GHz band for unlicensed use today, Accenture identified those other three bands—the lower 3 GHz, 4 GHz, and 7/8 GHz bands—as underutilized federal bands available for potential reallocation. Yet another mid-band option is the C-Band, where the U.S. was among the first movers globally with its 2021 auction of lower C-Band spectrum. We could follow a similar approach to auction up to an additional 220 megahertz of C-Band spectrum to meet future U.S. consumer and enterprise needs.



Ultimately, Congress and the Administration have multiple spectrum solutions to meet consumer demand, beat China, and also provide our allies with a roadmap for U.S.-led global ecosystems. The key is to act, and act now.

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Thank you for this opportunity to testify, and I look forward to your questions.