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IssueBRIEF

Unleashing 5G with "High Band" Spectrum

The FCC needs to complete its high-band spectrum proceeding this summer so that wireless companies can have access to the spectrum they will need for the United States to lead in 5G next-generation networks and the Internet of Things.

High-Band Spectrum Basics

Your smartphone today typically uses spectrum under 3 GHz. Those wireless signals can travel miles to a large tower in your neighborhood or along the highway. Thanks to significant R&D, wireless engineers can now utilize spectrum above 24 GHz: what's known as high-band or millimeter wave spectrum.

There are two key differences that are important for policymakers.

1. ***Bigger Bands Means More Data.***
   Today, most spectrum blocks are available in 5 to 10 MHz blocks. High-band spectrum will be available in 200 MHz or more blocks of spectrum that provide operators with the ability to carry significantly more traffic and higher resolution traffic.
2. ***Higher Frequency Means More Infrastructure.***
   While your smartphone signal today may go miles, high-band spectrum only goes meters. Carriers will need to deploy thousands of small cells to take advantage of the new spectrum to provide users with service.

The FCC's High-Band Proceeding

The FCC is working to provide access to 10,000 MHz of new high-band spectrum for mobile broadband services in its Spectrum Frontiers proceeding. Specifically, the FCC is studying the 28 GHz, 37 GHz, 39 GHz, and 64-71 GHz bands. All five FCC Commissioners on a bipartisan basis support the effort started last year and Chairman Wheeler said the FCC "plan[s] to act on the Spectrum Frontiers proceeding this summer."

5G and High-Band Spectrum

The U.S. is the global leader in 4G, which generates $400 billion annually in economic impact and directly supports 1 million jobs. The next generation of wireless, 5G, will provide significantly higher speeds, support substantially more devices as well as the Internet of Things, and be far more responsive. The larger bandwidth blocks available in high-band spectrum will be essential to delivering 5G consumer and enterprise applications from ultra HD and augmented reality to driverless cars and remote operations. Mobility will be a key driver of our nation's future economic growth. 5G and IoT will spur innovation, job creation, and increased productivity: it's projected to be at least $2.7 trillion.

Key High-Band Characteristics

BIGGER BANDS
200 MHz+

SHORTER DISTANCES
Meters, not Miles

Consumer Benefits of 5G

By the Numbers

10x Faster

100x More Devices

5x More Responsive

Key Asks

America's wireless industry fully supports the FCC's effort. By moving swiftly and establishing investment-friendly rules, the FCC can do a great deal this summer to ensure the U.S. remains the global mobile leader.

#1: Act This Summer

Other countries are dedicating significant resources to be the global leader in 5G as Korea (2018) and Japan (2020) announced aggressive 5G showcases. Wireless carriers and vendors are already building 5G solutions in the lab, and plan field trials this year, but lack access to key bands of spectrum. The U.S. was able to lead in 4G, in part, because of our first mover advantage thanks to critical spectrum auctions in 2006 (AWS) and 2008 (700 MHz) that fueled investment in 4G LTE networks. We need a similar effort to provide access to high-band spectrum this summer to ensure U.S. operators have time and resources to invest and plan in 5G networks.

#2: Promote Investment with Clear Service & Licensing Rules

Wireless operators are willing to invest billions in new infrastructure to support high-band spectrum as long as the FCC adopts service and licensing rules that are time-tested and proven to support mobile broadband services. The FCC should adopt a mix of licensed and unlicensed spectrum, and avoid experimental sharing or other non-exclusive, untested access arrangements. The FCC should adopt rules as close to the 700 MHz and AWS-3 bands as possible. Because utilization of this spectrum is so technically difficult, the rules need to be as simple as possible. Similarly, the FCC should adopt build-out requirements that appropriately reflect the far more limited coverage of high-band spectrum.

#3: Protect Existing High-Band Users Without Delay

The wireless industry has significant experience working with both commercial and government users of spectrum to protect mission-critical services while transitioning spectrum to mobile use. Existing government and satellite users of high-band spectrum will have a smooth transition and continued access to provide services. We are confident this can be done in an expeditious manner.

Key to Achieving our Broader and Complementary Spectrum Policy Objectives

High-band spectrum is complementary to traditional spectrum (under 3 GHz) for mobile use and the wireless industry will need both low-band and high-band spectrum to deliver on the promise of 5G. While FCC action on high-band this summer is essential, continued Congressional attention on low-band spectrum is equally important. Similarly, Congress, the FCC, and states need to ensure that local siting and rights of way rules are streamlined and simplified to support the small cell infrastructure necessary to support high-band spectrum deployments.

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Source: Volvo Cars

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5G

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