

Three Keys for Licensed Mid-Band Spectrum

Mid-band spectrum in the 3 GHz to 8 GHz range is the foundation of next-generation 5G networks. The U.S. needs to make more of it available to meet growing demand for mobile data, continue to build out robust 5G networks, and maintain our nation's 5G leadership.

To unlock 5G's full potential and enable the innovations that will define the decade, including 5G Home Broadband, industrial IoT, extended reality, cloud gaming, and the metaverse, hundreds of megahertz of additional mid-band spectrum must be made available with innovation-friendly rules including:

- 1 Exclusive licenses**, which give the license holder full control over the use of their spectrum for the licensed time period. Only the license holder is authorized to use the spectrum, which is essential to providing customers a high-quality experience with consistent and reliable connections, free from interference. Thanks to the certainty provided by licenses, wireless providers invest billions of dollars into building and maintaining their networks. Since 2018, the year 5G launched, providers have invested \$160 billion.
- 2 Full power levels**, which allow providers to boost capacity, while also requiring fewer cell sites, extending propagation and coverage more widely in a cost effective manner. This is especially useful in suburban and rural areas and is key to supporting the additional capacity needed for the many high-bandwidth connections expected from 5G use cases.

With full power, mid-band can be deployed with a similar network cell site density as low-band. For example, C-band spectrum is allocated at full power levels, but nearby CBRS spectrum is not. To fully overlay a C-band coverage area with low-power CBRS sites, 5–7x more cells would be needed.

- 3 Wide bands of contiguous spectrum**, which mean providers can achieve high throughput and faster speeds most efficiently, as opposed to trying to aggregate many small blocks of spectrum. This efficiency results in lower costs, which are passed onto consumers. Rysavy Research finds that with a 100 MHz radio channel, an operator can deliver peak throughput rates with 5G of 1 Gbps and average throughput rates of 100s of Mbps.

\$39B

Exclusive licenses encourage investment. Last year, providers invested a record \$39B in their networks because of the certainty provided by their spectrum holdings.

5-7x

Full power levels offer more coverage using fewer cell sites. It takes 7x the number of CBRS sites to cover the same rural area as full-power C-band. (Rysavy Research)

70%

Wide channel bands can have 70% lower costs per MHz than narrow channels. (Rysavy Research)