

Licensed Spectrum Needed to Support Wireless Demand

Wireless networks are the foundation for our 5G-connected society and all the data use, new devices, and applications that come with it. Brattle Group finds the U.S. needs 400 megahertz of full-power, licensed spectrum in the next five years to meet projected demand. This deficit will grow to nearly 1,500 megahertz by 2032.

Licensed spectrum is what wireless data runs on, and to keep up with the demand curve for data and devices, more licensed spectrum is needed. But today, the spectrum pipeline has run dry.

Wireless also has less spectrum than unlicensed and government users, particularly in mid-band frequencies, which offer an ideal blend of capacity and coverage for 5G. To rectify that imbalance and ensure networks meet demand, Congress should require auctioning 1500 megahertz of spectrum including portions of the lower 3 GHz, 4 GHz, and 7/8 GHz bands.

MID-BAND SPECTRUM IMBALANCE TODAY (3-8.5 GHz)



3390 MHz



1905 MHz



450 MHz
LICENSED

Why the Lower 3 GHz (3.1-3.45 GHz) band?

- **Progress on wireless use.** As part of the National Spectrum Strategy, NTIA and DoD are studying the possibility of commercial use in this band.
- **Some commercial incumbents relocating.** FCC is requiring some commercial users to move.
- **Better consumer experience.** Adjacent 3.45 GHz spectrum was recently auctioned for commercial use. Making lower 3 GHz available too allows providers to create larger channels of spectrum using similar equipment. Wide channels are easier to manage, enhance the consumer experience, and lower costs.
- **Use will keep prices down.** More than 70 countries are planning to or are using a portion of this band for wireless, which means networks can use standard hardware, reducing deployment costs as well as consumer device and service costs.

Why the 4 GHz (4.4-4.94 GHz) band?

- **Use will keep prices down.** Brazil, and many African and Asian nations, including China, assigned the band to 5G, and additional international interest is growing rapidly. Using the same band as other nations creates economies of scale, lowering costs for consumers.
- **Opportunity for more efficient usage.** Existing government operations, including drone applications, could be reorganized or relocated.

Why the 7/8 GHz (7.125-8.5 GHz) band?

- **Opportunity for more efficient usage.** NTIA found 7/8 GHz underutilized by current federal users.
- **Band being studied for wireless.** As part of the National Spectrum Strategy, NTIA is studying the possibility of commercial use in this band.
- **FCC is focused on it.** Chairwoman Rosenworcel noted that 7-15 GHz should be evaluated to provide “faster speeds and wider coverage.”