

FCC Opens Millimeter Wave Spectrum for 5G

July 14, 2016

At a meeting today, the Federal Communications Commission ("FCC") opened up an enormous new swath of wireless spectrum available for use by the next generation of cutting-edge wireless technologies. The FCC's action makes the US the first country in the world to open high-band millimeter wave ("mmWave") spectrum, sometimes designated as extremely high frequency ("EHF") or very high frequency ("VHF") spectrum, for use on a national basis. This spectrum is being eyed as a home for Internet of Things applications as well as the very high capacity wireless internet access services using 5G technology.

In the order, the FCC allocated 3.85 GHz of licensed spectrum and 7 GHz of unlicensed spectrum. Although this spectrum historically was limited to line-of-sight use, technological innovations such as bouncing signals off buildings or other structures promises much expansive use. By combining the new unlicensed spectrum with existing unlicensed spectrum to make 14 GHz of contiguous unlicensed spectrum available, the FCC hopes to jump-start US technologies that need access to high capacity, fast 5G networks. Carriers are expected to use mmWave spectrum to densify their networks and entrepreneurs will use the spectrum to provide a myriad of new applications for consumer, business, industrial and government use.

Unlicensed spectrum

Unlicensed spectrum already is available at 57–64 GHz and the FCC will add 7 GHz to create a 14 GHz unlicensed band from 57–71 GHz. The band is currently used for short range, outdoor point-to-point systems and for Wi-Fi high definition streaming.

Under the rules, the unlicensed spectrum would operate like the current Wi-Fi bands. Anybody using equipment that complies with the technical rules could operate in that spectrum, subject to an obligation not to interfere with other users.

Licensed spectrum

Spectrum in the 27.5–28.35 and 37–40 GHz bands will be made available through auctions, and no bidder will be allowed to obtain more than 1,250 MHz in any given area through the auctions. Parts of the bands will be shared with existing users, including the federal government and satellite operators.

Technical rules

The FCC adopted a flexible framework to govern the new spectrum bands, but established specific power levels for different types of transmitters. The rules also adopt construction and performance requirements for licensed services and require each licensee to file a statement before deployment on its approach to security for transmissions using the spectrum. This is the first time the FCC has required security information to be provided by licensees.

Further notice of proposed rulemaking

The FCC is asking for comment about the use of spectrum in eight additional high frequency bands. If all of these bands are allocated for 5G, another 18 GHz of spectrum will become available. The FCC also is asking for comment on additional technical rules, licensing requirements, and details on the sharing regime in the 37 GHz band.

Next steps

The unlicensed spectrum allocated in this decision could become available for use as soon as the new rules are effective, perhaps by the end of August or early in September. The licensed spectrum will be auctioned, and there is currently no timetable for when an auction might take place. If you have questions about this FCC proceeding, or about the FCC in general, please contact one of the Cooley lawyers on this alert.

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