



FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON

OFFICE OF THE  
CHAIRWOMAN

September 14, 2022

The Honorable Gregory Francis Murphy  
U.S. House of Representatives  
313 Cannon House Office Building  
Washington, DC 20515

Dear Representative Murphy:

Thank you for your letter regarding the ongoing proceeding at the Federal Communications Commission concerning Expanding Flexible Use of the 12.2-12.7 GHz band (the 12GHz band). The Commission started this proceeding in January 2021 to allow interested parties to address whether additional operations could be accommodated in this band without causing harmful interference to incumbent users. I understand and share your interest in ensuring that existing services in this band—including high-speed internet services to rural and underserved areas of the country—are not disrupted as the agency considers any action in this proceeding.

There are now three services authorized and operating in the 12 GHz band. Historically, this band was used for Direct Broadcast Satellite Service and Multi-Channel Video and Data Distribution Service. More recently, proponents of a new generation of satellite operations have received authorization from the Commission to launch and operate constellations of hundreds or thousands of satellites using several frequency bands, including the 12 GHz band. Thousands of satellites have been launched already, with new commercial satellite broadband services rolling out across the country. Last month, the Commission granted the applications of two satellite operators to use Earth Stations in Motion to deliver high quality, low latency broadband services to vehicles, boats, and aircraft while complying with Commission rules for coordination and spectrum sharing.

In the ongoing proceeding, the Commission is evaluating two potential approaches to future use of the 12 GHz band: increasing terrestrial use of the shared band or continuing with the current framework. This will require carefully examining the characteristics of this spectrum band—including its propagation and capacity characteristics, the nature of in-band and adjacent band incumbent use, and the potential for international harmonization—before deciding whether, and if so, how, to make it available for more intensive terrestrial or satellite use. This is a complex engineering process that involves analyzing competing technical analyses. For example, the agency is considering the criteria that should be used for assessing interference between mobile and satellite services. This is important because one study in our record points to an interference-to-noise ratio based on an ITU-R specification that applies to terrestrial and satellite interference, while others advocate for a more stringent threshold that some satellite

systems are required to use to coordinate among themselves under FCC rules. In addition, we are studying how to model the increase in probability of interference to satellite user terminals and how to determine what level of probability increase, if any, should be determined as acceptable. Work is also underway regarding the specific assumptions that should be made regarding the operational parameters and technical specifications of satellite user terminals in the band—such as how many there will be, what will be the separation distances between satellite user terminals and 5G stations, what will be the elevation angle, antenna height, and antenna gain of the satellite user terminals—and how best to structure a Monte Carlo simulation. Furthermore, we are determining what propagation model should be used to assess how the radiofrequency energy from 5G transmitters will travel and dissipate in rural, suburban, urban, and dense urban environments. In our record, some parties point to a 3GPP model, while others assert that an ITU-R specification is more appropriate. A wide range of legal, technical, and policy experts from the FCC’s Wireless Telecommunications Bureau, International Bureau, and Office of Engineering and Technology are engaged in this review and coordinating, as necessary, with other federal authorities in the process.

I appreciate your interest in this matter. As we move forward, the Commission will fully take into account the needs of consumers and existing users. Please let me know if I can be of any further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Jessica Rosenworcel", with a long horizontal flourish extending to the right.

Jessica Rosenworcel