

Via E-Mail

Mr. Sean Spivey
Senior Policy Advisor
National Telecommunications and Information Administration
1401 Constitution Avenue NW
Washington, DC 20230

Re: *Developing and Implementing a National Spectrum Strategy for the United States*, Docket No. NTIA-2023-0003

Dear Mr. Spivey:

Thank you for meeting on August 16, 2023, with Daniel Mansergh and me of Apple Inc. (Apple) to discuss the National Telecommunications and Information Administration's (NTIA) ongoing work to develop a *National Spectrum Strategy (Strategy)*. As we discussed, Apple believes that the *Strategy* should recognize the value of all wireless technologies, whether exclusively licensed, unlicensed, or shared. The *Strategy* also should promote the use of the latest engineering techniques to maximize the efficient use of spectrum. By taking such considerations into account, the *Strategy* can help to encourage continued US leadership and innovation in the wireless ecosystem.

One focus of our conversation was the importance of the *Strategy* in promoting global harmonization of spectrum allocations and technical rules. As Apple explained, consistency benefits businesses and users alike by encouraging long-term investments in innovative new technologies while helping to achieve economies of scale that reduce costs. Harmonization is also important to reducing interference risks along borders, allowing for interoperability of devices and equipment across markets, and enabling the success of US technologies by allowing for their worldwide availability and expansion.

Global harmonization is a key component to fostering the success of the 6 GHz band. Three years ago, the Federal Communications Commission (FCC) acknowledged the pressing need to make adequate spectrum available for the newest and fastest Wi-Fi technologies (e.g., Wi-Fi 6E and Wi-Fi 7) when it opened the entire 1200 MHz of the 6 GHz band for use by unlicensed devices.¹ In issuing this groundbreaking decision, the US took its place among the first of more than 50 countries in the world to designate all or part of the band for unlicensed use.² As we discussed, however, a number of other countries globally continue to consider whether all or a portion of the 6 GHz band should be identified for exclusive licensed wireless use. This question will be considered under Agenda Item 1.2 at the upcoming World Radiocommunication Conference

¹ *Unlicensed Use of the 6 GHz Band; Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 3852 (2020).

² See, e.g., *Countries Enabling Wi-Fi in 6 GHz*, Wi-Fi Alliance, <https://www.wi-fi.org/countries-enabling-wi-fi-in-6-ghz-wi-fi-6e> (last visited Sept. 1, 2023).

(WRC-23) in November and December 2023. We also discussed the importance of continuing to impress upon other nations the benefits of opening the 6 GHz band for unlicensed use. We advocated for further promoting global harmonization by adopting rules to permit very low power (VLP) portable operations in the 6 GHz band that would permit commercially viable operations while accounting for practical product design considerations such as form factor and power consumption. Many countries around the world have recognized that the mobility that comes with VLP is critical to the future of the 6 GHz band by approving portable and peer-to-peer VLP operations. These countries have established a baseline power level of 1 dBm/MHz, determining that this power level protects incumbents. The *Strategy* should recognize the benefits that accrue from allowing VLP operations at a power level as close as possible to that approved by other international regulatory bodies. Setting too low a power level would effectively block certain uses of the 6 GHz band in the US, make the band unusable for VLP operations, and give US consumers an inferior experience to that available to users abroad.

We also discussed Apple's continued interest in ultrawideband spectrum (UWB) in the 7.7-9.3 GHz range. As we explained, the US would benefit from an updated regulatory framework for UWB. In particular, modernized rules would enable more efficient deployments of new technologies in the band. At present, introduction of new UWB technologies is often delayed by the need to obtain a regulatory waiver from the FCC. The uncertainties inherent in the waiver process make it exceedingly difficult for companies to set predictable or reliable timetables for bringing new offerings to market. By working with the FCC to modernize the regulatory framework to reflect new use cases and operational advancements, NTIA will help UWB spectrum reach its full potential. Ensuring the stability of the 7.7-9.3 GHz spectrum band allocation also is fundamental to sustaining the band's ongoing success. To that end, the *Strategy* should recommend that this spectrum be out of scope for International Telecommunication Union study or other future spectrum reallocation discussions. Present commercial deployments in UWB spectrum coexist well with incumbent spectrum applications, due to UWB technology's very low operating power spread over a very wide bandwidth. Maintaining current allocations while allowing for growth in utilization by systems similar to those already in the band will enable further deployment of consumer and industrial services and products worldwide for real-time location-based services, hands-free services, and peer-to-peer services with a high degree of accuracy and security.

Our conversation also touched on how the *Strategy* could promote America's leadership in space-based connectivity. In particular, the *Strategy* should recommend maintaining available spectrum capacity for existing mobile satellite communications systems. Long-term, stable spectrum allocations are necessary to provide certainty to launch innovative, new satellite-to-device features, such as Apple's Emergency SOS via satellite, while ensuring continued protection of offerings from harmful interference.

We also discussed how coordination and information sharing among Federal agencies is vital to continued US wireless leadership. The *Strategy* should call for enhanced cooperation and transparency to achieve better alignment between Federal agencies

that regulate and use spectrum. Furthermore, the government should ensure that its approaches for efficient spectrum management take advantage of the latest learnings and technologies. The *Strategy* also should emphasize the importance to US wireless leadership of modernizing Federal spectrum management systems, attracting top engineering talent to public service, and ensuring that Federal employees involved in spectrum management have access to international best practices through ongoing training.

Please do not hesitate to contact me with any questions.

Sincerely,

/s/ Megan Anne Stull

Megan Anne Stull

Senior Manager

Government Relations & Regulatory

Apple Inc.