

Narrative Statement

In its *Spectrum Frontiers Report and Order*, the Federal Communications Commission took several steps to enable mobile operations in millimeter wave frequencies, including in the 28 and 39 GHz bands.¹ Now that the Commission has established service rules for these bands, Apple Inc. seeks to assess cellular link performance in direct path and multipath environments between base station transmitters and receivers using this spectrum. These assessments will provide engineering data relevant to the operation of devices on wireless carriers' future 5G networks.

Apple respectfully requests that the Commission grant its request for an experimental license for operations in accordance with Section 5.3(j) of its rules.² Apple intends to transmit from two fixed points located at Apple-controlled facilities in Cupertino and Milpitas, CA. These transmissions will be consistent with the parameters and equipment identified in Apple's accompanying Form 442, and will include the use of a horn antenna with a half-power beamwidth of 20 degrees in the E-plane and H-plane and a downtilt between 20 - 25 degrees. Apple anticipates that it will conduct its experiments for a period not to exceed 12 months.

Apple is aware of and will abide by its obligations under Section 5.84 to conduct its experiments in a manner that will not cause harmful interference to incumbent licensees.³ Apple intends to coordinate its operations with existing microwave users in the area, and anticipates that such coordination will be a condition of operation for its license.

With respect to Part 25 operations, the 28 GHz band is allocated for earth-to-space transmissions, and the Commission has determined that it is unlikely that aggregate energy from 28 GHz terrestrial operations would result in harmful interference to satellite receivers.⁴ In addition, as the Commission has recognized, the 39 GHz band "is currently unused by satellite operators."⁵ Nevertheless, Apple will also abide by any coordination requirement for Part 25 operations issued as a condition of operation for its license.

Finally, as noted on its Form 442, the transmitting equipment Apple intends to use is incapable of station identification. Because Apple will coordinate its operations with existing microwave users in the area, Apple respectfully requests that the Commission exempt this authorization from the station identification requirements in Section 5.115.⁶

¹ See generally *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd. 8014 (2016) ("*Spectrum Frontiers Report and Order*").

² 47 C.F.R. § 5.3(j).

³ 47 C.F.R. § 5.84.

⁴ *Spectrum Frontiers Report and Order* ¶ 61.

⁵ *Id.* ¶ 75.

⁶ 47 C.F.R. § 5.115.