



Via Electronic Filing

Federal Communications Commission
Ms. Marlene H. Dortch
Secretary
445 Twelfth Street SW
Washington, DC 20554
USA

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**Re: Request by Google LLC for Waiver of Section 15.255(c)(3)
of the Commission's Rules (ET Dkt. No. 18-70)**

Dear Ms. Dortch,

Infineon Technologies AG (Infineon)¹ supports Google LLC's (Google) request for a waiver of the FCC's rules for Project Soli radars used for interactive motion sensing in the 57-64 GHz band.² Grant of the Waiver Request would pave the way for introduction of an innovative new technology at 60 GHz that can coexist with devices and services already operating in the band. As a supplier of chipsets for Project Soli, Infineon is excited to be part of bringing the benefits of touch-free Soli sensors in Google devices to consumers in the United States.

The FCC has been presented with ample information to demonstrate that Project Soli can share 60 GHz spectrum with technologies already deployed in the band. Google has provided both simulations and laboratory test results to the FCC that show how granting the Waiver Petition would have little impact on Wi-Fi performance.³ Laboratory testing of Soli technology using an

¹ Infineon Technologies AG is a world leader in semiconductor solutions that make life easier, safer and greener.

² See Request by Google LLC For Waiver of Section 15.255(c)(3) of the Comm'n's Rules in ET Docket No. 18-70 (filed Mar. 7, 2018) (Waiver Request).

³ See Dr. Stefan Mangold, Lovefield Wireless GmbH, *Assessing the Interference of Miniature Radar on Millimeter Wave 60 GHz Wi-Fi* (Feb. 21, 2018) (attachment to Waiver Petition); Letter from Megan Anne Stull, Counsel, Google LLC, to Marlene H. Dortch, Secretary, FCC, in ET Docket No. 18-70 (filed June 8, 2018) (Google June 2018 Letter) (attaching Dr. Stefan Mangold, Lovefield Wireless GmbH, *Assessing the Interference of Miniature Radar on Millimeter Wave 60 GHz Wi-Fi - Supplemental Analysis* (June 8, 2018) and Qi Jiang, et al., *Measurement Study on Soli/802.11ad Coexistence* (June 2018) (Jiang et al.)).

⁴ See Jiang et al. at 15-16.

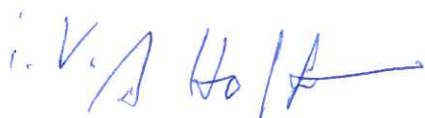
⁵ *Id.*

Infineon chipset showed that regardless of the operating power level and duty cycle tested, Soli technology generated only minimal interference, even in worst-case scenarios.⁴ Those tests also showed that for Soli technology to cause significant harmful interference to an 802.11ad link in overlapping frequencies, the Soli device would need to be positioned in a very unusual and unlikely place -- directly between the 802.11ad client and access point, with Soli's antenna transmitting from an extremely close position (i.e., within a few centimeters) to and directly into an 802.11ad antenna.⁵ Indeed, Google's tests showed how an 802.11ad link's operations would be more degraded by a second 802.11ad link in close proximity than by a closely placed Soli device; the former situation, it should be noted, is much more likely to arise in the real world.⁶

Since 2014, the European Union has allowed technologies at 60 GHz to comply with ETSI standard EN 305 550, which allows for transmissions at higher power levels than current FCC rules.⁷ As Google noted, no concerns have been raised about interference with unlicensed communications technologies where such devices are free to operate.⁸ And, no commenter in this proceeding has explained, let alone shown, why Soli technology in the United States should be limited to power levels so much lower than those allowed in Europe. Such a result makes global launches of products needlessly complicated, raising both supplier and manufacturer costs.⁹

For the reasons above, Infineon respectfully requests that the FCC expeditiously rule favorably on Google's Waiver Petition.

Kind regards,
Infineon Technologies AG



Dr. Alfred Hoffmann
Corporate Vice President
Public Affairs and Associations



Roman Wingert
Corporate Legal Counsel

⁶ *Id.*

⁷ See ETSI, *Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Short Range Devices (SRD); Radio Equipment to be Used in the 40 GHz to 246 GHz Frequency Range; Part 2: Harmonized EN Covering the Essential Requirements of Article 3.2 of the R&TTE Directive*, ETSI EN 305 550-2 V1.2.1 (Oct. 2014), at http://www.etsi.org/deliver/etsi_en/305500/305502/01.02.01_60/en30555002v010201p.pdf (EN 305 550).

⁸ Google June 2018 Letter at 3.

⁹ See, e.g., *id.* at n.3 (noting that grant of the Waiver Petition would provide flexibility for future innovation in Soli technology and complement previous FCC actions to "promote harmony and keep pace with international standards.").