

BEFORE THE UNITED STATES INTERNATIONAL TRADE COMMISSION

In the Matter of:  
Certain Mobile Electronic Devices and Radio  
Frequency and Processing Components Thereof

Investigation No. 337-TA-1065  
83 Fed. Reg. 54138

STATEMENT ON THE PUBLIC INTEREST OF THE R STREET INSTITUTE, THE ELECTRONIC FRONTIER FOUNDATION, ENGINE ADVOCACY, AND LINCOLN NETWORK

Pursuant to the Notice of Request dated October 26, 2018, the above-identified organizations respectfully submit the following statement on the public interest in this investigation. Briefly, the commenters agree with the Recommended Determination, which concluded that an exclusion order would be contrary to the statutory public interest factors under sections 337(d)(1) of the Tariff Act of 1930. No exclusion order should issue in this case because, as Judge Pender found based on substantial evidence, the monopolization of the premium baseband processor chip market would harm competition, consumers, and national security, contrary to the public interest.<sup>1</sup>

These comments will address the following four points. First, the likely monopolization of the premium baseband processor market will seriously undermine economic competition and innovation. Second, the resulting lack of competition will harm national security interests, in particular because it will increase the national mobile communications infrastructure's vulnerability to cyber-attacks. Third, monopolization of a key component of mobile communications devices will frustrate the United States' stated policy of promoting Internet access and broadband deployment. Fourth, the sole competing public interest—Qualcomm's purported desire to vindicate its patent rights—is both questionable given Qualcomm's other litigation positions, and inconsequential given Qualcomm's easy access to a full remedy in district court.

**I. Qualcomm's market power over baseband processors is highly relevant to the ITC's public interest consideration, and it weighs strongly against any exclusion order.**

An exclusion order on Intel-based iPhones would adversely affect competitive conditions in the United States economy as carriers both domestic and international are all working to upgrade their net-

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<sup>1</sup>The arguments presented equally apply to any cease-and-desist order under section 337(f)(1).

works to 5G, the next generation of mobile networking technology. If Intel is forced to exit the market for premium baseband processors at this crucial stage, Qualcomm will have a global monopoly that may be unassailable for years to come. Such monopolization in the market for premium baseband processors will inevitably harm competition and consumers downstream, for at least three reasons.

First, without an alternative supplier in the market, Qualcomm will be able to restrict output and charge supra-competitive prices to smartphone manufacturers that inevitably will be passed on, at least in part, to smartphone purchasers. Such monopoly rents would be good for Qualcomm, but bad for consumer welfare. Second, absence of competition from suppliers like Intel will reduce Qualcomm's incentives to innovate and improve the quality of baseband processors. The resulting decline in baseband chip innovation will leave consumers with lower quality smartphones, and leave network operators and application developers with artificial constraints in their own innovative work. Consumer welfare and competitive conditions in the U.S. economy will thus suffer.

Third, high entry barriers in the premium baseband processor market mean that a Qualcomm monopoly over baseband processors may be unassailable for years or even decades. As such, market forces will likely be unable to correct for the competitive imbalance that would result from an exclusion order in this case. Therefore, the public interest weighs strongly against such an exclusion order here.

Judge Pender correctly disregarded Qualcomm's argument that Intel-based iPhones could be readily substituted for other iPhone models or smartphones made by competing manufacturers, like Samsung and LG. Competition for smartphones in the downstream market says nothing about competition—or lack thereof—in the upstream market for premium baseband processors, which is the basis for this dispute.

Certainly enforcement of patent rights will always impair competition to a degree, and that general phenomenon alone should not overcome imposition of an exclusion order in mine-run ITC investigations. Here, though, the particular circumstances of the especially concentrated premium baseband processor market—largely caused by Qualcomm's own anti-competitive licensing behavior—require special application of the public interest factors to prevent the creation of a Qualcomm monopoly.

## II. National security concerns relating to the United States' competitiveness in 5G development weigh strongly against exclusion.

The Recommended Determination relied correctly on national security concerns relating to mobile phone networks and particularly 5G technology to conclude that an exclusion order solidifying Qualcomm's monopoly in the premium baseband processor market would harm the public interest. Indeed, an exclusion order would especially harm national security in this investigation, because a single manufacturer's dominance of the market would threaten communications infrastructure cybersecurity, presenting vulnerabilities open to widespread cyber-attack by both foreign and domestic bad actors.

Baseband processors, being the necessary component that mediates communications between mobile devices and cell towers, are an attractive target for hackers seeking to commandeer mobile infrastructure for malicious ends. Security researchers have repeatedly documented insecurities and weaknesses in baseband processors.<sup>2</sup> The so-called "IMSI catcher" device, frequently used by the government and now available on the open market, essentially tricks baseband processors into revealing their users' communications, enabling mass surveillance.<sup>3</sup> Failure to design baseband processors with tight security in mind has thus enabled hackers and foreign adversaries to spy on domestic communications.

Competition in the leading-edge premium baseband processor market is essential to the national security interest in cybersecure baseband processors. Competition forces companies to out-innovate each other, to conduct adversarial research into flaws in their competitor's products, and to argue over 5G standards development in ways likely to elicit the most secure technologies. A lack of competition, by contrast, would lead to a monoculture of Qualcomm baseband processors—a situation that security experts have repeatedly recognized as inherently vulnerable to cyberattack.<sup>4</sup> Accordingly, given how critical baseband

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<sup>2</sup>See, e.g., Ralf-Philipp Weinmann, *Baseband Attacks: Remote Exploitation of Memory Corruptions in Cellular Protocol Stacks*, 6 PROC. USENIX WORKSHOP ON OFFENSIVE TECHS. (2012), <https://www.usenix.org/system/files/conference/woot12/woot12-final24.pdf>; Lucian Armasu, *Qualcomm Firmware Vulnerabilities Expose 900 Million Devices, Including Security-Focused Smartphones*, TOM'S HARDWARE (Aug. 9, 2016), <https://www.tomshardware.com/news/quadrooter-qualcomm-android-firmware-vulnerabilities,32414.html>.

<sup>3</sup>See Devlin Barrett, *Americans' Cellphones Targeted in Secret U.S. Spy Program*, WALL ST. J., Nov. 13, 2014, <https://www.wsj.com/articles/americans-cellphones-targeted-in-secret-u-s-spy-program-1415917533>; Heath Hardman, *The Brave New World of Cell-Site Simulators*, 8 ALB. GOV'T L. REV. 1 (2015).

<sup>4</sup>See Daniel E. Geer Jr., *Monoculture: Monopoly Considered Harmful*, IEEE SECURITY & PRIVACY, Nov.–Dec. 2003, at 14, <https://ieeexplore.ieee.org/abstract/document/1253563>.

processors are to national infrastructure, cybersecurity and national security concerns strongly weigh against an exclusion order that would render a single firm the dominant provider of baseband processors.

### **III. An exclusion order would undermine the national interest in promoting widespread deployment of broadband Internet access.**

As discussed above, an exclusion order on Intel-based iPhones would substantially harm competition in the market for premium baseband processors. That competitive harm would inevitably flow downstream, resulting in higher prices and/or lower quality in the smartphone market. Such harms to consumers and competition are bad enough, but an exclusion order would also harm public health and welfare writ large by frustrating other policy goals set by Congress.

In particular, Congress has repeatedly made clear that promoting widespread deployment of broadband Internet access is a key goal of public policy.<sup>5</sup> Given that smartphones and other mobile devices are now the primary tool consumers use to access the Internet,<sup>6</sup> price increases on these devices due to upstream monopolization by Qualcomm will harm the ability of consumers to access the Internet. This harm will be especially pronounced among low-income consumers, who are particularly sensitive to price.

While the ITC has no direct role in promoting broadband deployment or regulating the communications marketplace, an exclusion order would frustrate the mission of other state and federal agencies and run counter to policy goals expressed in law. The national interest in promoting widespread deployment of broadband Internet access weighs against the grant of an exclusion order on Intel-based iPhones.

### **IV. Qualcomm's purported interest in protecting patent rights is questionable given its litigation conduct, and undermined by the presence of more appropriate district court remedies.**

Against all of the above concerns of great national importance, Qualcomm posits nothing more than its private interest in enforcing its patent rights. Yet that private interest should be accorded little

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<sup>5</sup>See, e.g., 47 U.S.C. § 151 (establishing the Federal Communications Commission “so as to make available, so far as possible, to all the people of the United States . . . wire and radio communication service”); § 1302(a) (providing for FCC and state agencies to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans . . .”).

<sup>6</sup>See, e.g., Yoni Heisler, *Mobile Internet Usage Surpasses Desktop Usage for the First Time in History*, BGR (Nov. 3, 2016), <https://bgr.com/2016/11/02/internet-usage-desktop-vs-mobile/>.

weight especially in the present context, for at least two reasons.

First, as the Recommended Determination recognized, Qualcomm has a complete remedy in the district courts. Apple is a domestic company amenable to service; indeed, Qualcomm is litigating in district court against Apple right now. An exclusion order remedy would be not merely duplicative, but grossly overcompensatory Qualcomm given that the value of the articles to be excluded—complex multi-feature smartphones—far exceeds the value of the power-management features of the sole infringed patent. An exclusion order, even a limited one as the Staff proposes, would be both unnecessary and excessive.

Second, there is strong reason to believe that Qualcomm is not even interested in compensation for any patent infringement. In a related district court case, Apple sought declaratory judgment that it did not infringe several Qualcomm patents. Rather than countersuing for infringement, Qualcomm voluntarily gave Apple a covenant not to sue for infringement.<sup>7</sup> Certainly the patents at issue before the Commission are different, but Qualcomm's willingness to forego any remedy on a large portion of the company's patent portfolio strongly suggests that recompense for its patent rights is not Qualcomm's motivation.

Instead, it is apparent from the evidence adduced in this investigation that Qualcomm's primary motivation is to boot Intel from the baseband processor market and from future 5G innovation. For reasons provided above, that result and the consequent Qualcomm monopoly would undermine competition, national security, and national priorities in Internet access deployment. An exclusion order would thus be contrary to the public welfare, competitive conditions, production of competitive articles, and United States consumers.

## **V. Conclusion**

For the foregoing reasons, the Commission should find that any exclusion order would be contrary to the statutory public interest factors, and accordingly decline to enter any such order.

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<sup>7</sup>See Qualcomm Inc.'s Memorandum in Support of Motion for Partial Dismissal at 3–4, *In re Qualcomm Litig.*, No. 3:17-cv-108 (S.D. Cal. Sept. 14, 2018) (Doc. No. 616-1), <https://www.courtlistener.com/recap/gov.uscourts.casd.522828/gov.uscourts.casd.522828.616.1.pdf>; Florian Mueller, *Patent Exhaustion Keeps Qualcomm on the Run from Apple's Claims and Motions*, FOSS PATENTS (Oct. 1, 2018), <http://www.fosspatents.com/2018/10/patent-exhaustion-keeps-qualcomm-on-run.html>.

Respectfully submitted,

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