

No. 19-16122

**IN THE UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

FEDERAL TRADE COMMISSION,

Plaintiff–Appellee,

v.

QUALCOMM INCORPORATED,

Defendant–Appellant.

On Appeal from the United States District Court
for the Northern District of California
No 5:17-cv-00220-LHK (Hon. Lucy H. Koh)

**BRIEF OF HIGH TECH INVENTORS ALLIANCE
AS AMICUS CURIAE IN SUPPORT OF PLAINTIFF–
APPELLEE AND AFFIRMANCE**

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INTEREST OF *AMICUS CURIAE*¹

The High Tech Inventors Alliance (HTIA) is a coalition of high technology companies created to advocate on legal and policy issues relating to innovation and patents.² HTIA's members—including Adobe, Cisco, Dell, Google, Intel, Microsoft, Oracle, and Salesforce—are among the most innovative technology companies in the world, creating computer hardware, software, semiconductor, and communications products and services that support growth in every sector of the economy. HTIA's members collectively invest approximately \$75 billion in research and development each year and generate technological advances protected by more than 175,000 patents. Each member regards innovation as core to its businesses, and each has a strong

¹ All parties have consented to the filing of this brief. Pursuant to Federal Rule of Appellate Procedure 29(a)(4)(E), HTIA certifies that no counsel for a party authored this brief in whole or in part, and no party, counsel for a party, or other person or entity besides *amicus* and its counsel, made a monetary contribution intended to fund the preparation or submission of this brief.

² HTIA is described at <https://www.hightechinventors.com/>. It is not a corporation, and hence no corporate disclosure statement accompanies this brief. See FED. R. APP. P. 29(a)(4)(A).

interest in ensuring that patents are used to promote innovation, not to impede it.

This case is of particular interest and importance to HTIA because it involves technical standards adopted by standard setting organizations (SSOs), standard-essential patents (SEPs) that implementers of those standards may need to license, and commitments by companies that own SEPs to license them on fair, reasonable, and non-discriminatory (FRAND) terms. Some of HTIA's members touch all of these facets in their respective businesses: They participate in defining new technical standards in SSOs that utilize FRAND licensing; they create and contribute technologies for use in standards; they patent those technologies and declare new SEPs; they commit to license those SEPs on FRAND terms; and, last but not least, they make products and services that implement many standards and practice many SEPs. HTIA therefore has a significant interest in ensuring that FRAND licensing commitments, like the ones made by Appellant Qualcomm Incorporated (Qualcomm) and at issue here, are properly interpreted and enforced.

INTRODUCTION AND SUMMARY OF ARGUMENT

This case concerns cellphones and the cellular communications standards that they implement to connect to cellular networks. Every consumer who buys a cellphone expects that the device will have the necessary components to make and receive calls on his or her carrier's network. In other words, cellular connectivity is not even a differentiating feature of the cellphone; quite the opposite, it is a standard feature that no consumer thinks twice about. Instead, a consumer chooses a cellphone based on other features like the camera, the touchscreen display, or the battery life. Each of these features reflects the contributions of numerous other innovative companies besides Qualcomm, with many of them designing and manufacturing specialized components that are then combined by a cellphone manufacturer to create a finished consumer device.

Many cellphone components, including the modem chipsets at issue in this case, implement technical standards, many of which are associated with patents that have been declared essential by any number of companies. In picking and choosing which components to use for a given cellphone model, a device manufacturer reasonably expects

that the components will comply with any standards they are supposed to implement and will come licensed with any patents that are claimed by others to be essential to those standards. Because of Qualcomm's refusal to license its SEPs to rival chipmakers, however, modem chipsets stand out as the glaring exception to the rule, and they consequently have given rise to an excessive amount of patent litigation involving cellular SEPs.

It does not have to be this way. Properly interpreted and enforced, Qualcomm's FRAND licensing commitments to SSOs require that it license its SEPs to everyone, including rival chipmakers. That was what the SSOs intended and what other industry participants expected. Qualcomm's refusal to do so circumvents the safeguards on anticompetitive behavior that FRAND commitments are designed to provide and excludes competition. This Court should not allow Qualcomm to subvert the standard setting process to further its economic self-interest. The Court should therefore affirm the district court's judgment of liability and hold Qualcomm to its FRAND commitments to license its SEPs to all comers, including rival chipmakers.

ARGUMENT

I. A FRAND Commitment Requiring a License to Be Offered to All Comers Safeguards the Procompetitive Advantages of Standard Setting.

A. Standard Setting Produces Procompetitive Benefits But There Are Antitrust Risks Because the Process Necessarily Excludes Competing Alternatives.

“Industry standards are widely acknowledged to be one of the engines driving the modern economy.... The most successful standards are often those that provide timely, widely adopted, and effective solutions to technical problems.” U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROTECTING INNOVATION AND COMPETITION ch. 2, at 33 (2007), <https://bit.ly/2OT7QLf>. At the same time, however, standards can reduce or eliminate competition and consumer choice and dictate the development of a market. *Id.* at 34. Consequently, “courts have been sensitive to antitrust issues that may arise in the context of collaboratively set standards. They have found antitrust liability in circumstances involving the manipulation of the standard-setting process or the improper use of the resulting standard to gain competitive advantage over rivals.” *Id.* at 34–35.

Notably, in *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, the Supreme Court observed that “[a]greement on a product standard is, after all, implicitly an agreement not to manufacture, distribute, or purchase certain types of products.” 486 U.S. 492, 500 (1988). At issue were electrical conduits used to carry electrical wires through walls and floors. By adding a requirement to building codes adopted by hundreds of state and local governments that steel conduit pipe be used in construction, the participants in the standard-setting activity effectively excluded alternative products like a conduit made from polyvinyl chloride (PVC) from use, potentially eliminating PVC conduits from competition. *Id.* at 495–96.

Technical standards work in much the same way—by eliminating alternative technologies from implementation and use. *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 314 (3d Cir. 2007) (“When a patented technology is incorporated in a standard, adoption of the standard eliminates alternatives to the patented technology.”). *Accord Research in Motion Ltd. v. Motorola, Inc.*, 644 F. Supp. 2d 788, 793 (N.D. Tex. 2008). Additionally, if the technology selected for inclusion in a widely-used standard happens to be patented, the patent itself becomes

something that implementers must license because it no longer faces competition from alternative technologies that implementers might have chosen instead. *Broadcom*, 501 F.3d at 314.

Because standard setting necessarily excludes alternatives to what is being chosen, private SSOs “have traditionally been objects of antitrust scrutiny.” *Allied Tube*, 486 U.S. at 500. As the Court observed six years earlier in *American Society of Mechanical Engineers v. Hydrolevel Corp.*, they “can be rife with opportunities for anticompetitive activity” if participants are allowed to act according to their own economic incentives. 456 U.S. 556, 571 (1982).

At the same time, however, the *Allied Tube* Court recognized that standards may advance legitimate goals such as safety—or in the case of many technical standards, interoperability—provided they are promulgated “through procedures that prevent the standard-setting process from being biased by members with economic interests in stifling product competition.” 486 U.S. at 501. In other words, if there are “meaningful safeguards” sufficient to prevent the standard-setting process from being subverted by self-interested actors, “private standards can have significant procompetitive advantages.” *Id.* at 501

& 509. Standard setting is “permitted ... under the antitrust laws only on the understanding that it will be conducted in a nonpartisan manner offering procompetitive benefits.” *Id.* at 506–07. *Cf. Hydrolevel*, 456 U.S. at 572 (“Thus, without any meaningful safeguards, ASME entrusted the interpretation of one of its codes to Hardin. As a result, M&M was able to use ASME’s reputation to hinder Hydrolevel’s competitive threat.”).

B. A FRAND Commitment Serves As a Meaningful Safeguard Against Anticompetitive Hold-up and Subversion, Preventing Unlawful Monopolies.

In *Broadcom*, the Third Circuit held that a FRAND licensing commitment is one of those “meaningful safeguards” that the Supreme Court in *Hydrolevel*, 456 U.S. at 572, and *Allied Tube*, 486 U.S. at 501 & 509, found necessary to ensure that standard setting produces procompetitive advantages or benefits. As already mentioned, if a technology incorporated into a standard happens to be patented, the patent itself becomes something that implementers must license because alternative technologies that implementers could have used have been eliminated from consideration. *Broadcom*, 501 F.3d at 314. Because the patent is deemed essential to practicing the standard, an implementer that has been locked in to practicing the standard has to

take a license. *Id.* See generally Joseph Farrell, et al., *Standard Setting, Patents, and Hold-up*, 74 ANTITRUST L.J. 603, 612–14 (2007).

This Court recognized this very scenario in *Microsoft Corp. v. Motorola, Inc.*, referring to it by its commonly used name—“hold-up.” 795 F.3d 1024, 1031 (9th Cir. 2015) (*Microsoft III*).³ See also *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1209 (Fed. Cir. 2014) (“Patent hold-up exists when the holder of a SEP demands excessive royalties after companies are locked into using a standard.”); ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS, at 35 (describing the potential hold-up by the owner of a patented technology “after its technology has been chosen by the SSO as a standard and others have incurred sunk costs which effectively increase the relative cost of switching to an alternative standard”).

A FRAND commitment cabins the ability of a SEP owner to demand supracompetitive royalties by requiring that it offer SEP licenses on fair, reasonable, and nondiscriminatory terms.

³ For consistency’s sake, we adopt Judge Koh’s convention of referring to the district court decision, *Microsoft Corp. v. Motorola, Inc.*, 864 F. Supp. 3d 1023 (W.D. Wash. 2012), as *Microsoft I*, and the first Ninth Circuit decision, *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872 (9th Cir. 2012), as *Microsoft II*. See 1ER251 n.2, 1ER265, 1ER266.

Microsoft III, 795 F.2d at 1031 (“To mitigate the risk that a SEP holder will extract more than the fair value of its patented technology, many SSOs require SEP holders to agree to license their patents on ‘reasonable and nondiscriminatory’ or ‘RAND’ terms.”). “It is in such circumstances that measures such as FRAND commitments become *important safeguards* against monopoly power.” *Broadcom*, 501 F.3d at 314 (emphasis added). *See also id.* at 305 (referring to FRAND commitments as “a bulwark against unlawful monopoly”).

FRAND commitments also guard against subversion of the standard-setting process, or the results of the process, by a SEP owner acting in its economic self-interest. As the Supreme Court in *Allied Tube* observed, “[t]ypically, private standard-setting associations, ... include members having horizontal and vertical business relations,” which can create “economic incentives to restrain competition.” 486 U.S. at 500. Here, Qualcomm’s business position as both a SEP owner and a supplier of modem chipsets creates incentives for it to refuse to license its SEPs to rival chipmakers, thereby preventing competition in the markets for cellular modem chips that Qualcomm dominates. *See* 1ER129–31 (finding that Qualcomm had concluded it was more

lucrative to license OEMs than chipmakers); 1ER139 (finding that Qualcomm wanted to protect its own chipset business).

As this Court has previously observed, SSOs, through their intellectual property rights (IPR) policies, address this very concern about selective refusals to license by requiring that a SEP owner license its patents on reasonable and nondiscriminatory terms. *Microsoft III*, 795 F.3d at 1031. “Under these agreements, an SEP holder *cannot refuse* a license to a manufacturer who commits to paying the RAND rate.” *Id.* (emphasis added). *See also Microsoft II*, 696 F.3d at 876 (observing that many SSOs require SEP owners “to agree to license those patents *to all comers* on terms that are ‘reasonable and nondiscriminatory,’ or ‘RAND’”) (emphasis added); *accord* 1ER265.

In summary, a requirement to grant FRAND licenses to any interested implementer prevents a SEP owner from distorting competition by selectively withholding licenses from its competitors. *See, e.g.*, Letter from Renata B. Hesse, Acting Asst. Atty. Gen., U.S. Dep’t of Justice, Antitrust Div., to Michael A. Lindsay, Dorsey & Whitney LLP, Response to Inst. of Elec. and Elecs. Eng’rs.’ Request for Bus. Rev. Ltr. at 6 (Feb. 2, 2015), <https://bit.ly/2R2QazK> (concluding

that the clarifications to IEEE’s IPR policy “may further help to mitigate hold up, ensure access to technology necessary to implement IEEE-SA standards, and eliminate certain potentially anticompetitive practices”).⁴ That requirement ensures that standards development yields the “significant procompetitive advantages” the Supreme Court pointed to in *Allied Tube*, 486 U.S. at 501, and avoids becoming an environment “rife with opportunities for anticompetitive activity,” as the Court had feared in *Hydrolevel*, 456 U.S. at 571.

⁴ The Institute for Electrical and Electronics Engineers, Inc. (IEEE) clarified, among other aspects of its IPR policy, that a RAND commitment requires a SEP owner to license its SEPs for “any Compliant Implementation,” meaning that it “cannot refuse to license its patents for use in IEEE-SA standards at certain levels of production.” *Id.* at 14. The Department of Justice’s Antitrust Division remarked that “[p]arties contemplating manufacturing products conforming to an IEEE standard, ... will know that they will have access to necessary technology, thereby facilitating implementation of these standards, to the benefit of consumers. Thus, this provision potentially could foster competition and innovation in products implementing IEEE-SA standards.” *Id.*

It bears noting that the IEEE’s 2015 IPR policy update has not chilled participation in standard setting by patent owners, as some critics had feared. On the contrary, technical contributions within the SSO’s working groups have only continued to increase, and the upward trend holds even in those working groups that are patent-heavy. Tim Pohlmann, *Empirical Analysis of Technical Contributions to IEEE 802 Standards* (IPLytics Working Paper, Jan. 2019), <https://bit.ly/2R0qgwo>.

II. Standards Are Ubiquitous in the High-Tech Industry, Making Enforcement of FRAND Commitments Essential to an Efficient Market.

A. High-Tech Consumer Devices Implement Hundreds of Standards and Practice Thousands of SEPs.

In contrast to the relatively simple fact patterns in *Allied Tube* and *Hydrolevel*, this case arises in one of the standards-intensive, “patent-thicket”⁵ industries in which HTIA members are active. In those industries, bringing a high-tech consumer product or service to market can involve using inventions described in patents numbering in the hundreds to thousands. Many of those patents may have been declared essential to one or more of the hundreds of standards that a modern consumer electronics device like a smartphone or a home Wi-Fi router implements. In this complex setting, the opportunities for anticompetitive behavior by SEP owners can only increase, and

⁵ See Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in ADAM B. JAFFE, JOSH LERNER & SCOTT STERN, EDS., 1 INNOVATION POLICY AND THE ECONOMY ch. 4, at 119 (2001), <https://www.nber.org/chapters/c10778.pdf> (defining a “patent thicket” as “an overlapping set of patent rights requiring that those seeking to commercialize new technology obtain licenses from multiple patentees” and observing that “[t]he need to navigate the patent thicket and holdup is especially pronounced in industries such as telecommunications and computing in which formal standard setting is a core part of bringing new technologies to market”).

bringing these multi-component, multi-functional devices to market would be nigh impossible, were it not for FRAND commitments ensuring that each and every manufacturer of a standards-compliant component or feature is able to license the SEPs claimed to be essential for implementing a given standard.

This case involves cellular handsets, i.e., mobile phones, and the cellular communications standards that they practice. 1ER2–3, 1ER8. In mobile phones, the majority of which today are smartphones,⁶ cellular communications standards enable *just one* consumer feature—cellular connectivity—out of the dozens of features that consumers expect to see in any mobile phone that they buy and use. For example, consumers expect that a mobile phone will connect not only to cellular communications networks but also other wireless networks like Wi-Fi and Bluetooth. They also expect that a mobile phone will have a camera, a global positioning system (GPS), access to the internet, and a

⁶ According to a 2019 Pew Research Center study, 86% of surveyed adults in the United States reported owning a smartphone, compared to 13% who reported owning a cellphone that is not a smartphone. PEW RESEARCH CENTER, SMARTPHONE OWNERSHIP IS GROWING RAPIDLY AROUND THE WORLD, BUT NOT ALWAYS EQUALLY 43 (2019), <https://pewrsr.ch/2Ky3sQL>.

high-resolution display and touchscreen. There are additional features that may be less apparent to consumers, like power saving and fast charging. Each of these features involves its own panoply of standards.

A 2010 empirical study of laptops, which share many of the same functions and features as smartphones, provides some idea of just how many other standards besides cellular communications standards can be implemented by a mobile phone. That study identified a *minimum* of 251 standards relating to technical interoperability that are embodied in or directly utilized by a modern laptop computer. Brad Biddle, Andrew White & Sean Woods, *How Many Standards in a Laptop? (and Other Empirical Questions)* 1 (Working Paper, Sept. 10, 2010), <https://bit.ly/2rII7xl>.

The authors emphasized, however, that the actual count is certainly much higher (maybe upwards of 500 or more standards). *Id.* Of the 251 identified standards, 112 (44%) were developed by industry consortia, 90 (36%) by formal standards development organizations, and 49 (20%) by individual companies. *Id.* The authors were also able to classify 197 of the 251 identified standards into one of three licensing regimes: RAND – 148 (75%), royalty-free – 43 (22%), and patent pool – 6

(3%). *Id.* As the Biddle et al. study makes clear, a laptop (and, equally, a smartphone) may implement hundreds of distinct technical standards, developed by different standard-setting bodies and involving different licensing regimes for SEPs. This is typical for high-tech consumer products.

Notwithstanding the hundreds of standards that a smartphone may implement, this case concerns only a handful of them: cellular communications standards developed by the Third Generation Partnership (3GPP) like the Universal Mobile Telecommunications System (UMTS) (the 3d-generation cellular standard used throughout most of the world) and Long-Term Evolution (LTE) (the 4th-generation cellular standard). 1ER5. Even with respect to those standards, Qualcomm is only one of a large number of patentees who claim to own SEPs. 1ER7. Other companies, including Ericsson and Nokia, claim to own portfolios of cellular SEPs at least as numerous as Qualcomm's. 1ER131; 1ER166–67.

According to a 2017 report by the World Intellectual Property Organization, Qualcomm has a 9.41% share of cellular SEPs relating to the 4G Long Term Evolution (LTE) cellular communications standard

(“the highest-speed cellular standard which has been widely commercialized to date,” 1ER4), based on patent family count. WORLD INTELL. PROP. ORG., INTANGIBLE CAPITAL IN GLOBAL VALUE CHAINS ch. 4 – *Smartphones: What’s inside the box?*, at 111 & Fig. 4.9 (2017), <https://bit.ly/2CCVL7g> (link to chapter 4). Samsung and Huawei have larger shares, however (13.49% and 9.88%, respectively), and Nokia and Ericsson round out the top five (8.74% and 6.58%, respectively).

The WIPO Report thus shows that although Qualcomm is certainly an innovator in cellular, it is hardly the only innovator, even with respect to cellular communications standards. Indeed, some of HTIA’s members (Google, Microsoft) appear in the figure as well. The Report also underscores that in a standards-intensive patent-thicket industry like smartphones, no company can implement a technical standard or produce a standards-compliant high-tech product without using patented technology belonging to numerous other companies. See Ann Armstrong, Joseph J. Mueller & Timothy D. Syrett, *The Smartphone Royalty Stack: Surveying Royalty Demands for the Components within Modern Smartphones* 4 (Working Paper, May 29, 2014), <https://bit.ly/2Lk73lR> (finding, *inter alia*, that “announced

royalty demands for LTE cellular functionality approach \$60 for a \$400 smartphone but the average cost of the baseband processor that implements cellular functionality is as little as \$10 to \$13”).

Furthermore, innovation in mobile phones extends far beyond the cellular communications standards that each and every device of course must utilize. Like other versatile high-tech consumer products, smartphones perform many functions, and Qualcomm is only one of many companies that invest heavily in research and development to create the many different functions and features that users demand. *See, e.g.*, INTANGIBLE CAPITAL IN GLOBAL VALUE CHAINS, ch. 4, at 116 (noting that “smartphone design—both physical and software-related—is one of the most critical factors driving consumer purchase decisions, technology acceptance and later brand loyalty”).

B. FRAND Commitments Make It Possible for Manufacturers of High-Tech Consumer Devices to Incorporate Different Features, Thus Promoting Innovation.

As the reports and studies discussed in the preceding section illustrate, a company wishing to design, manufacture, and market a high-tech consumer device like a mobile phone faces a daunting task of assembling licenses to the thousands of patents that have been declared

essential for the many technical standards in the devices it wants to bring to market. The burden is especially pronounced for small firms and startups, which do not have the resources or the expertise to evaluate each technical standard and its associated SEPs. Moreover, with the advent of the “Internet of Things,” even seemingly mundane consumer products like garage door openers and coffeemakers are incorporating wireless technologies with which their manufacturers may have no prior experience.

HTIA member companies have direct experience with negotiating SEP licenses in the context of wireless standards like LTE and Wi-Fi, among numerous other standards. Even for our companies, each of which is large, sophisticated, and employs numerous lawyers with experience in intellectual property and licensing, it is far more efficient to rely on upstream suppliers of the components and subsystems we integrate to figure out what technical standards are implicated by the hardware and software, what SEP licenses are needed, and what the terms of those licenses should be. The suppliers of components we purchase and integrate are likely to be in a far better position than we are to understand what specifications of a given technical standard

their components implement, what technologies and solutions are being used, which ones will require licenses to patents (both SEPs and non-SEPs) belonging to others, and what value to assign to the patented technologies. Unlike our companies, our component suppliers frequently prosecute patent applications in the areas covered by wireless standards, and are more familiar than we are with what inventions merit patent protection and which patents offered for licensing are, in fact, valid and infringed. Much of the technical information that our component suppliers will rely on in making these determinations relates to their own products and therefore is likely to be proprietary in nature. They will not be eager to share that information with a customer who also purchases from their competitors.

The information asymmetry between component suppliers and their customers is heightened by the threshold need to establish which of the many, many patents that have been declared essential to implement common standards are in fact essential. SSOs typically disclaim any responsibility for evaluating claims that patents are, in

fact, required to implement standards.⁷ Furthermore, it is widely understood in the industry that many patents claimed to be essential by participants in standards development are not, in fact, essential. The authors of one recent study employed an independent third-party evaluator of technical essentiality and found that, on average, only 35.2 percent of all patents declared for the LTE mobile-communications standard are in fact essential to that standard. Robin Stitzing, et al., *Over-Declaration of Standard Essential Patents and the Determinants of Essentiality* at 4 (Working Paper, Oct. 27, 2017),

<https://bit.ly/34ZT5wA>.⁸ The authors also found that although essentiality is positively correlated with a higher likelihood of patent

⁷ See, e.g., THE ALLIANCE FOR TELECOMM. INDUS. SOLUTIONS (ATIS), OPERATING PROCEDURES FOR ATIS FORUMS AND COMMITTEES § 10.4.1 (version 5.5, Aug. 23, 2018), <https://bit.ly/37NEZkj>; INST. OF ELEC. AND ELECS. ENG'RS, INC. STANDARDS ASS'N, STANDARDS BOARD BY-LAWS § 6.2 (Mar. 2019), <https://bit.ly/2L4JxJi>; AM. NAT'L STANDARDS INST., ANSI ESSENTIAL REQUIREMENTS: DUE PROCESS REQUIREMENTS FOR AMERICAN NATIONAL STANDARDS § 3.1.4 (Jan. 2019), <https://bit.ly/2DuXH2i>.

⁸ See also Mark A. Lemley & Timothy Simcoe, *How Essential Are Standard-Essential Patents*, 104 CORNELL L. REV. 607 (2019); Rudi Bekkers, et al., *Disclosure Rules and Declared Essential Patents* (Working Paper, July 18, 2017), <https://bit.ly/2DELEzz>; David J. Goodman & Robert A. Myers, *3G Cellular Standards and Patents*, presented at WIRELESS2005 (June 2005), <https://bit.ly/33xHNPC>.

infringement (as one might expect since the accused device presumably implements the standard), it is *not* positively correlated with a higher likelihood of *patent validity*. *Id.* at 4–5.

The lack of correlation between declared patents and valid patents identified in the study by Stitzing and his co-authors likewise counsels in favor of having the upstream supplier of a component or subsystem, as opposed to the device manufacturer, obtain the necessary FRAND licenses. Given its superior experience with a small number of technical standards implemented in the products it supplies, as opposed to the hundreds of different standards that are implemented in the finished device, a component supplier is likely to have a greater knowledge regarding the specifications in that standard, which SEPs are in fact essential to which specifications, and, last but not least, what prior art may render a SEP invalid. As the party making those determinations, the component supplier is in a better position to evaluate the costs and benefits of taking a license versus not doing so, and the potential liabilities it will incur by offering to indemnify the device manufacturer should the SEP owner sue its customers for patent infringement. In the event of a lawsuit, the component supplier is better situated than the

manufacturer to defend against infringement assertions by disputing whether SEPs are, in fact, valid and infringed.

The interpretations of IPR policies that this Court reached in the *Microsoft* cases—that making a FRAND commitment obligates a SEP owner to license all comers—puts component suppliers in the best position to assume full responsibility for its own product. Today, component suppliers sometimes refuse to indemnify for SEPs that may be infringed by the products they provide because they are unable to license those SEPs from companies like Qualcomm that refuse to grant licenses to component makers. As the district court found, the non-assertion covenant that Qualcomm was willing to provide did not provide sufficient security to Samsung’s device manufacturers—customers. 1ER124.

On its own, a device manufacturer would have to obtain and manage licenses to SEPs for the *hundreds* of standards that a smartphone implements. That would be administratively unwieldy, especially given that the standards in question can have different licensing regimes (e.g., FRAND, royalty-free, patent pool) and other rules unique to the standards bodies that created them (e.g., industry

consortia, formal standards development organizations, individual companies). What's more, there are standards pertaining to entirely separate and distinct aspects of a smartphone—for example, cellular communications, internet protocols, video formats, and display/touchscreen. A device manufacturer, especially a small company or startup entering the market, would have to dedicate additional time and technical resources just to stay on top of the standards covering each of these aspects. In addition, the same device manufacturer would have no choice but to succumb to the whims of the SEP owner's business model or choose to leave the market altogether.

For all of these reasons, it makes economic sense to allocate the responsibility and risk of securing FRAND licenses for a given component or subsystem to the firm that supplies it rather than the manufacturer that incorporates it into the finished consumer product. This is true today, and will become even more relevant with the advent of the “Internet of Things,” as wireless technologies are implemented in a wider and wider range of consumer devices.

III. Qualcomm’s Refusal to License Rivals Distorts the Efficient Operation of the Chipset Market and Harms Competition.

A. Qualcomm’s Refusal Prevents Market Participants from Allocating Responsibilities and Risks of Standards Implementation to the Party Better Able to Bear Them.

Viewed against this backdrop, Qualcomm’s refusal to license its SEPs to rival suppliers of modem chipsets means that cellphone manufacturers cannot rely on chipmakers other than Qualcomm to provide them with products that come with licenses to Qualcomm’s SEPs. 1ER115 (“Without a license to Qualcomm’s SEPs, a rival cannot sell modem chips with any assurance that Qualcomm will not sue the rival and its customers for patent infringement.”). There is no legitimate business justification for this refusal. As the district court concluded in granting the FTC’s motion for partial summary judgment, “undisputed evidence in Qualcomm’s own documents demonstrates that a modem chip is a core component of the cellular handset, which only underscores how a SEP license to supply modem chips is for the purpose of practicing or implementing cellular standards and why Qualcomm cannot discriminate against modem chip suppliers.” 1ER272.

For the reasons discussed in Part II above, a company that makes the core component for implementing cellular communications standards such as the 3G and 4G standards UMTS and LTE is in the best position to evaluate the essentiality of any declared SEPs and secure any FRAND licenses needed to practice the standards. Qualcomm's refusal to license its component competitors distorts the normal workings of the market by preventing cellphone manufacturers and chipset suppliers other than Qualcomm itself from achieving an optimally efficient allocation of responsibilities and risks with respect to the implementation of cellular communications standards and the license of any implicated SEPs.

If the district court's judgment were reversed, Qualcomm will be able to continue subverting the requirements set out in SSO IPR policies with impunity. That will set a bad precedent in terms of how the nondiscrimination element in FRAND licensing commitments is to be interpreted and applied. That will embolden many other SEP owners, both those that have participated in standards development themselves, *see* 1ER131–33 (finding that Nokia and Ericsson have imitated Qualcomm's business practice to license only device

manufacturers because it is more lucrative), and the (far more numerous) set of SEP owners that purchase SEPs to assert them against HTIA members and other implementers. *See* Armstrong, et al., *The Smartphone Royalty Stack*, at 7–8 (pointing to the number of discrete technologies inside the modern smartphone and the explosion of the smartphone market as both providing incentives for non-practicing entities holding SEPs to target implementers).

As the Ninth Circuit held in *Microsoft II*, a FRAND commitment should be viewed as a promise by a patent owner to license its SEPs “to all comers” in exchange for the benefit of having these patents implicated in the standards. 696 F.3d at 876 & 885. In *Microsoft III*, the Ninth Circuit reiterated this fundamental understanding, holding that under a FRAND commitment, “an SEP holder *cannot refuse* a license to a manufacturer who commits to paying the RAND rate.” 795 F.3d at 1031 (emphasis added). Relying on the settled understanding of this Court in *Microsoft II* and *Microsoft III*, the district court concluded on summary judgment that “a SEP holder that commits to license its SEPs on FRAND terms must license those SEPs *to all applicants*.” 1ER266 (emphasis added). No exceptions.

On appeal, Qualcomm proffers a self-serving, post-hoc reading of what IPR policies require: A FRAND commitment requires a SEP owner to license its SEPs only to those applicants whose products fully “practice” or “implement” the standards in question. Appellant’s Br. at 135. Qualcomm maintains that a modem chip neither fully practices nor implements the cellular communications standards; only the finished handset does. *Id.*

Qualcomm’s argument is based on a fundamental mischaracterization of the relevant SSO IPR policies. As the district court noted in granting the FTC’s motion for partial summary judgment opinion, the IPR Policies of the two SSOs at issue—the Telecommunications Industry Association (TIA) and the Alliance for Telecommunications Industry Solutions (ATIS)—do not limit a SEP owner’s FRAND commitment to applicants who themselves “practice” or “implement” the standard in question as a whole. 1ER271. That should come as no surprise: TIA and ATIS anticipate that the standards they create will be implemented by numerous industry participants, some of which will supply other implementers with components that implement a portion of a TIA or ATIS standard. For this reason, the TIA IPR Policy

speaks in terms of an applicant practicing any “Normative portions” of a given standard. *Id.* And the ATIS IPR Policy speaks only in general terms, i.e., “for the purpose of implementing a standard,” which multiple actors can of course cooperate to attain. Moreover, Qualcomm’s argument is belied by its own conduct. It has sought chip-level FRAND licenses from other SEP owners in the past, and it has an existing chip-level license from Ericsson, as the district court found. 1ER127–28.

Suffice it to say, participants in the cellphone industry and in other information and communications technologies industries make large investments to bring innovative new devices to consumers. They do so in reliance on SEP owners honoring the FRAND commitments they have voluntarily made to SSOs to grant SEP licenses to all applicants. Qualcomm’s refusal to license rival chipmakers, if allowed to stand, would upset those investment-backed expectations and chill industry-wide incentives to engage in standards-related innovation.

B. Qualcomm’s Refusal Prevented or Delayed Entry by Competing Chipmakers, Spurred Their Exit, or Impeded Their Growth.

The district court’s judgment should be affirmed because Qualcomm’s refusal to license its SEPs to rival chipmakers is also

anticompetitive. As already noted above, the district court held, based on the record below and following Ninth Circuit precedent in *Microsoft II* and *Microsoft III*, that Qualcomm has a contractual obligation under its FRAND commitments to TIA and ATIS to license its SEPs to *all applicants*, regardless of whether they manufacture complete devices like cellular handsets or device components like modem chips. 1ER264–65, 1ER273. Qualcomm’s refusal to honor its commitments not only breaches contracts it entered into but also violates the antitrust laws, as explained below.⁹ The district court’s judgment of liability should therefore be affirmed on this basis. *See* 1ER115–25 (cataloging the harm to competition resulting from Qualcomm’s refusal to license its rivals and reiterating prior findings on summary judgment that Qualcomm’s refusal violates its FRAND commitments).

In *City of Vernon v. Southern California Edison Co.*, the Ninth Circuit recognized that conduct giving rise to a contract dispute could also be the basis of antitrust liability. 955 F.2d 1361, 1368 (9th Cir. 1992) (“We are *not* convinced that antitrust liability may *not* be

⁹ Not every breach of a FRAND commitment rises to the level of a Sherman Act violation.

predicated on conduct which also happens to create a contract dispute.”) (emphases added). While “a claimed breach of contract by unreasonable conduct, *standing alone*, should not give rise to antitrust liability,” a claim that the defendant “acted anticompetitively and without a legitimate business reason” can provide the necessary predicate for antitrust liability.¹⁰ *Id.* (emphasis added). Even if the defendant had a contractual right to act as it did, that does not grant it “the freedom to act anticompetitively.” *Id.* See also *Tops Mkts., Inc. v. Quality Mkts., Inc.*, 142 F.3d 90, 100 (2d Cir. 1998) (finding anticompetitive conduct where the “plain effect of [the induced breach of a contract for the sale of real property] was to prevent Tops, a Quality competitor, from entering the Jamestown market at the Washington site”); Herbert Hovenkamp, *FRAND and Antitrust* 10–11 (Univ. Penn. Inst. for Law & Econ. Research Paper No. 19-31, 2019), <https://bit.ly/2CUImYB> (“Whether a firm’s breach of a FRAND commitment also violates the

¹⁰ In its opening brief, Qualcomm selectively quotes the sentence containing the “standing alone” language from *Vernon* and ignores that the Court went on to say, “But in this case, Vernon is not simply claiming that Edison breached its contract.” Appellant’s Br. at 52 n.6; see *Vernon*, 955 F.2d at 1368.

antitrust laws depends on whether the conduct in question causes competitive harm of a sort that the antitrust laws recognize.”).

Based on the record below, Qualcomm’s refusal to license its SEPs to rival chipmakers gives rise to antitrust liability because Qualcomm has acted anticompetitively and without a legitimate business reason. Specifically, Section V.C. of the district court’s post-trial findings of facts and conclusions of law details, on a firm-by-firm basis, how Qualcomm’s refusal to license has excluded competition in the market for standards-compliant modem chipsets and harmed the competitive process. *See* 1ER115–25.

Those findings by the district court amply support the judgment of liability. Similar to the anticompetitive conduct in *Tops Markets*, Qualcomm’s refusal to license prevented some firms from entering the modem chipset market, or at least delayed their entry. Qualcomm’s refusal caused other rivals to exit the market. Last but not least, Qualcomm’s refusal cabined the growth of other rivals, by locking them into agreements that restricted their sales of chipsets to certain customers, customers that were required to independently obtain licenses from Qualcomm for chips they purchased from Qualcomm’s

competitors. All of these outcomes made the modem chipset market much less competitive than it otherwise would have been. *See Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883, 894 (9th Cir. 2008) (“Anticompetitive conduct is behavior that tends to impair the opportunities of rivals and either does not further competition on the merits or does so in an unnecessarily restrictive way.”); Hovenkamp, *FRAND and Antitrust* 40 (“A refusal to deal with competitors additionally violates the antitrust rule of reason only if it produces the requisite anticompetitive effects.... A violation would occur if, for example, the defendant’s selective denial of standard essential patents to market rivals serves to impede their growth, raises their costs, or perhaps exclude them from the market altogether.”).

Furthermore, as noted already, Qualcomm’s refusal to license meant that its chipmaker rivals could not guarantee to customers that their components were fully licensed as far as Qualcomm’s SEPs were concerned, meaning that prospective customers were concerned with the risk of infringement and potential injunctions and exclusion orders that could drive them from the market. 1ER115. As a result, even those rivals that had entered the modem chipset market could not compete on

an equal footing with Qualcomm. They could not offer the same assurances to their customers. In this way the competitive process was distorted.

For all of the above reasons, this Court should affirm the district court's judgment of liability. If the district court's decision were overturned, the impact on high-technology industries will be profound and not just restricted to smartphones. Standards-based communications technologies are being incorporated into a wide variety of next-generation consumer electronic devices that will rely on high-speed wireless connectivity. Innovation in and the availability of these products—sometimes referred to the “Internet of Things”—will be threatened if Qualcomm's refusal to comply with its voluntarily assumed obligation to license rival component vendors goes unchallenged. And other companies will be emboldened to adopt licensing practices similar to Qualcomm's, which could imperil not only innovation and adoption, but also threaten the viability of consensus-based standard setting across industries.

CONCLUSION

Upholding the district court's finding of antitrust liability and enforcing the FRAND licensing commitments that Qualcomm made will support collaborative standard setting and innovation and curb the incentives of SEP owners to engage in opportunistic conduct that excludes competition. The judgment of the district court should be affirmed based on the court's findings.

Dated: November 29, 2019

Respectfully submitted,

/s/ Henry C. Su

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CERTIFICATE OF COMPLIANCE

9th Cir. Case No. 19-16122 – Federal Trade Commission v. Qualcomm Incorporated

I am the attorney for *Amicus Curiae* High Tech Inventors Alliance.

This brief complies with the type-volume limitation of FED. R. APP. P. 32(a)(7)(B) (as made applicable to amicus briefs by FED. R. APP. P. 29(a)(5)) because it contains 6546 words, excluding the parts of the brief exempted by FED. R. APP. P. 32(f).

This brief complies with the typeface requirements of FED. R. APP. P. 32(a)(5) and the type style requirements of FED. R. APP. P. 32(a)(6) because this brief has been prepared with Microsoft Word Office 365, using a proportionally spaced, serif typeface (Century Schoolbook) in 14-point size, with boldface and italics reserved for emphasis (e.g., headings) or distinction (e.g., case names).

Dated: November 29, 2019

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CERTIFICATE OF SERVICE

I hereby certify that on November 29, 2019, I electronically filed a true and correct copy of the foregoing document with the Clerk of this Court using the appellate CM/ECF system, which in turn effectuates service by sending a notice of electronic filing to all counsel participating in this appeal who are registered CM/ECF users.

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