

No. 19-16122

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

FEDERAL TRADE COMMISSION,
Plaintiff-Appellee,

v.

QUALCOMM INC.,
Defendant-Appellant.

Appeal from the United States District Court,
Northern District of California, No. 5:17-cv-00220 (Koh, J.)

**BRIEF OF AMICUS CURIAE THE COMPUTER AND
COMMUNICATIONS INDUSTRY ASSOCIATION IN SUPPORT OF
PLAINTIFF-APPELLEE AND AFFIRMANCE**

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INTEREST OF AMICUS CURIAE AND INTRODUCTION

The Computer and Communications Industry Association (“CCIA”) is an international nonprofit association representing a broad cross-section of computer, communications, and Internet industry firms that collectively employ nearly one million workers and generate annual revenues in excess of \$540 billion. CCIA’s members contribute to the standard-setting activities of numerous standard-setting organizations through which industry-wide technical standards are adopted, and they create and sell innovative products that utilize those standards. They also own thousands of standard-essential patents (“SEPs”) and license SEPs on fair, reasonable, and nondiscriminatory (“FRAND”) terms.

As developers and users of standardized wireless technologies, CCIA’s members have a strong interest in ensuring that FRAND obligations are extended to all industry participants. FRAND obligations prevent the standard-setting process from becoming a vehicle for SEP holders to exclude competition and charge supracompetitive prices by virtue of the market power conferred upon them through adoption of industry standards. FRAND obligations also ensure that industry participants have the freedom to establish efficient licensing arrangements.

In this case, the district court correctly held that Qualcomm’s repeated refusals to license its SEPs on FRAND terms to competing modem chip manufacturers constitute both contract breaches and antitrust violations. Qualcomm’s FRAND

violations are contract breaches because the FRAND commitments that Qualcomm made in exchange for its SEPs extend, by their terms, to *all* industry participants. In addition, however, as a matter of antitrust law, FRAND obligations are *necessary* to render lawful the collective standard-setting process that, absent those obligations, would confer monopoly power on the SEP holders (like Qualcomm) that participate in and benefit from collective adoption of an accepted industry standard. Qualcomm’s FRAND violations therefore are also breaches of *antitrust* duties to deal and have had the intended effect of excluding competitors from the marketplace. Accordingly, Qualcomm’s breaches of its FRAND obligations also violate the antitrust laws.

To remedy those violations, the district court correctly enjoined Qualcomm from refusing to license competitors on FRAND terms. This Court therefore should affirm the district court’s judgment and hold that, as a matter of federal antitrust law, Qualcomm must license its SEPs to all industry participants.¹

¹ This brief is filed with the consent of all parties. No counsel for a party authored this brief in whole or in part. No party or counsel for a party contributed money that was intended to fund preparing or submitting this brief. No person other than *amicus curiae*, its members, or its counsel contributed money that was intended to fund preparing or submitting this brief.

ARGUMENT

I. Requiring FRAND Licenses to Be Made Available to All Industry Participants Safeguards Competition and Promotes Efficiency.

FRAND obligations serve at least two critical functions: First, because collectively adopted industry standards confer unearned monopoly power on SEP holders arising from their patents' incorporation into the standards, rather than because of any intrinsic value of their patents, FRAND obligations are necessary to prevent SEP holders from exploiting that collectively generated monopoly power to charge supracompetitive prices, exclude competition, or raise rivals' costs. Second, FRAND obligations enhance the efficiency of the marketplace by maximizing the licensing options for businesses at all levels of the supply chain.

A. FRAND Obligations Safeguard Competition by Preventing Patent Holdup and the Exclusion of Rivals.

Courts, commentators, and government agencies have long recognized that the private standard-setting process, through which competing businesses agree to adopt particular technologies on an industry-wide basis, entails the potential for both procompetitive efficiencies and anticompetitive abuses. As the Supreme Court has explained, “private standards can have significant procompetitive advantages,” but “the members of [standard-setting organizations] often have economic incentives to restrain competition.” *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S.

492, 500–501 (1988). Thus, the “standards set by such associations have a serious potential for anticompetitive harm.” *Id.*²

The potential for anticompetitive harm arises because standards foreclose certain avenues of competition and leave monopolies in their place. Before a standard is adopted, there are generally alternative technologies that compete vigorously for adoption by industry participants and incorporation into the standard. But once a patented technology is chosen and made essential to a widely adopted standard, that competition typically ceases. *See Jorge L. Contreras, Much Ado about Hold-Up, 2019 U. Ill. L. Rev. 875, 882 (2019).*

Industry participants, after making substantial investments in standard-compliant products and services, have few (if any) practicable alternatives to using standard-essential technologies. *See Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 310 (3d Cir. 2007).* It is often prohibitively expensive to reallocate investments, and alternative technologies typically are impracticable or at a minimum far less competitive than before the standard was adopted. U.S. Dep’t of Justice & Fed.

² See also, e.g., *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1030–31 (9th Cir. 2015); *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 913 (N.D. Ill. 2012) (Posner, J.), *rev’d in part on other grounds*, 757 F.3d 1286 (Fed. Cir. 2014); U.S. Dep’t of Justice & Fed. Trade Comm’n, *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition* 33–56 (2007), <https://bit.ly/33kEr2s>; Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. Corp. L. 1151, 1179–80 (2009).

Trade Comm'n, *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition* 36 (2007), <https://bit.ly/33kEr2s>. In nearly all industries, no individual market participant could adopt an alternative standard on its own because doing so would render its products incompatible with all other manufacturers' products.³ Thus, a widely adopted industry standard endows SEP holders with "monopoly power in the market in which the patented technology is licensed for use in implementing the standard." A. Douglas Melamed & Carl Shapiro, *How Antitrust Law Can Make FRAND Commitments More Effective*, 127 Yale L.J. 2110, 2114 (2018).

The cellular standards at issue here illustrate this phenomenon. For more than a decade, businesses in the telecommunications industry have invested trillions of dollars in standards-compliant networks, cell towers, end-user products, components, manufacturing processes, and software. Indeed, mobile operators alone invested over a trillion dollars in their networks between 2010 and 2017. See GSMA, *The Mobile Economy 2017* 20 (2017), <https://bit.ly/34z3cIM>. It would be extraordinarily costly for the industry to change course and adopt new standards for these already-implemented generations of cellular technology. Industry participants

³ Moreover, a collective industry decision to abandon a standard in order to avoid a SEP holder's technology could raise concerns that the industry has violated the antitrust laws by excluding a competitor. See Herbert Hovenkamp et al., *IP and Antitrust* § 35.04[A] (2018).

therefore have no realistic choice but to license technologies essential to these standards from SEP holders.

The monopoly power conferred upon SEP holders as a consequence of their technology being incorporated into a widely adopted industry standard thus “creates an opportunity for [SEP holders] to engage in anti-competitive behavior.” *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1030–31 (9th Cir. 2015) (*Microsoft III*); see also Joseph Farrell et al., *Standard Setting, Patents, and Hold-Up*, 74 Antitrust L.J. 603, 607 (2007).

First, SEP holders that produce standards-compliant products can exploit their SEP monopolies to exclude competitors from the marketplace. Unless restrained from doing so, SEP holders have “the right to enjoin anyone else from using the standard.” Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 Cal. L. Rev. 1889, 1902 (2002). As a consequence, absent a requirement to license rivals on FRAND terms, the incorporation of patents into standards could give SEP holders the ability to exclude rivals from the marketplace or impose higher costs on the use of their products, thereby harming competition. See, e.g., *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 191 (3d Cir. 2005) (“When a monopolist’s actions are designed to prevent one or more new or potential competitors from gaining a foothold in the market by exclusionary, i.e. predatory,

conduct, its success in that goal is not only injurious to the potential competitor but also to competition in general.”” (citation omitted).

Second, absent compliance with FRAND obligations, SEP holders have the ability to engage in so-called “patent holdup.” Patent holdup occurs when a SEP holder exploits the monopoly power conferred upon it by a widely adopted standard to demand supracompetitive licensing fees from implementers that have become “locked in” to the standard. *See Broadcom*, 501 F.3d at 310; *see also* Contreras, *supra*, at 881–83. In that way, SEP holders can “demand more for a license than the patented technology, had it not been adopted by the [standard-setting organization], would be worth.” *Microsoft III*, 795 F.3d at 1031.

Patent holdup harms competition in several ways. It “harms consumers by raising the cost of products that comply with the standard.” Melamed & Shapiro, *supra*, at 2116. It hampers downstream innovation by “inhibit[ing] investment on the part of downstream firms in developing new applications for patent- or standard-specific technologies.” Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. Corp. L. 1151, 1169 (2009). And it may lead standard-setting organizations to “to avoid potentially patented technologies altogether, or to worsen standard-setting delays to a degree that may well lower the overall return to patented inventions.” Farrell et al., *supra*, at 623.

As explained in Part III, *infra* at 18, the antitrust laws require standard-setting organizations to adopt safeguards to protect against the risks of anticompetitive conduct by SEP holders. Most standard-setting organizations comply with that obligation, in large part, by requiring SEP holders to agree to license their SEPs on FRAND terms. *See, e.g.*, Jorge L. Contreras, *Global Rate Setting: A Solution for Standards-Essential Patents?*, 94 Wash. L. Rev. 701, 704 (2019); Lemley, *supra*, at 1906.

Properly defined FRAND obligations prevent SEP holders from excluding competition by requiring them to license *all* industry participants (including competitors) on fair, reasonable, and nondiscriminatory terms. Such FRAND obligations also prevent patent holdup, as Judge Poser has explained, by “confin[ing] the patentee’s royalty demand to the value conferred by the patent itself as distinct from the additional value—the hold-up value—conferred by the patent’s being designated as standard-essential.” *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 913 (N.D. Ill. 2012), *rev’d in part on other grounds*, 757 F.3d 1286 (Fed. Cir. 2014). FRAND obligations thus “prevent a wealth transfer from implementers and their customers to SEP holders” by ensuring that “ex post royalties will be closer to the competitive ex ante price.” Melamed & Shapiro, *supra*, at 2116, 2121.

B. FRAND Obligations Enhance Marketplace Efficiency by Maximizing Licensing Flexibility.

FRAND obligations also promote marketplace efficiency by ensuring that market participants at all levels of the supply chain have access to SEP licenses on FRAND terms. In today’s economy, businesses that use wireless communications technology come in all shapes and sizes and use the technology at various levels of the supply chain. Although the supply chain for wireless technologies begins with modem chip manufacturers, the length of the chain varies significantly industry by industry.

In some industries, modem chips supplied by manufacturers are incorporated directly into end-user products, such as mobile phones. In other industries, however, those modem chips are combined with other components by so-called “module manufacturers” as part of standards-compliant circuit boards or as “embedded modules.” These circuit boards and modules may then be incorporated into “Internet of Things” devices like smart watches and home thermostats, or they may be further embedded into more complex assembled products, such as a car’s navigation system or a medical device. Still other businesses deploy, integrate, or build upon those end-user products in various ways. For example, a software company might develop applications using mobile phones to facilitate ride sharing, or a warehouse might incorporate telecommunication sensors into software that tracks inventory.

CCIA's members include businesses at these various "upstream" (modem chip) and "downstream" (component, end product, software, and services) portions of the supply chain. CCIA recognizes and respects that downstream businesses may, in some cases, seek to obtain their own SEP licenses directly from modem chip manufacturers.

But it often is far more practical and economical for downstream customers to rely on upstream component makers to negotiate and obtain any necessary SEP licenses. The modem chip market is highly concentrated, with a small number of companies producing substantially all the available output; so a few licenses among chip makers can reduce transaction costs by negating the need for the tens of thousands (or more) of downstream businesses to negotiate individual licenses. In addition, downstream businesses often lack expertise about the validity, essentiality, and value of patents that have been declared to be SEPs. These businesses may prefer to rely on their upstream suppliers, which are in the best position to evaluate the patented technologies, to negotiate fair licenses.

To be effective, FRAND obligations thus should encompass a requirement that SEP holders provide licenses to *all* applicants who seek to implement the standard, without distinguishing among applicants at different levels of the supply chain. As discussed below, that is precisely what the FRAND policies at issue in this case in fact require.

II. The TIA and ATIS Policies Require Qualcomm to Offer FRAND Licenses to Competing Modem Chip Manufacturers.

Qualcomm made contractual FRAND commitments to two relevant standard-setting organizations—the Telecommunications Industry Association (“TIA”) and the Alliance for Telecommunications Industry Solutions (“ATIS”—in exchange for having its patented technologies incorporated into those organizations’ standards. 1ER263. The district court correctly held, consistent with the text of those FRAND commitments and the policies animating them, that Qualcomm’s FRAND obligations extend to *all* industry participants, including “to rival modem chip suppliers.” 1ER6.

Under California law, which the parties agree applies to these contracts (Qualcomm Br. 134), the “language of a contract” “will be followed” when it “is clear and not absurd.” *Edwards v. Arthur Andersen LLP*, 44 Cal. 4th 937, 953 (2008); *see also* Cal. Civ. Code § 1638. Here, Qualcomm’s FRAND commitments parrot the portions of the TIA and ATIS intellectual property rights (“IPR”) policies governing the scope of FRAND obligations. *See* ER262–63; *see also* ECF Nos. 793-6, 796-1. Those policies are clear and not absurd. They first extend FRAND obligations broadly to “all applicants” (TIA) and “applicants” (ATIS). 1ER261–62. Each policy then imposes just one qualification, limiting FRAND obligations to:

- TIA: “all applicants … to the extent necessary for the practice of any or all of the Normative portions for the field of use of practice” of the standard. 1ER261–62.

- ATIS: “applicants desiring to utilize the license for the purpose of implementing the standard.” 1ER262.

These qualifications, which are known as “field-of-use” limitations, prohibit “a licensee from realizing the benefits of the license in certain technical fields.” *See* Thomas C. Meyers, *Field-of-Use Restrictions as Procompetitive Elements in Patent and Know-How Licensing Agreements in the United States and European Communities*, 12 Nw. J. Int’l L. & Bus. 364, 366 (1991). Here, the restrictions clarify that applicants are entitled to FRAND terms only if they use Qualcomm’s SEPs for the purpose of implementing TIA or ATIS standards, rather than competing standards (or no standards at all).

Qualcomm, however, interprets these field-of-use limitations to restrict the *categories of businesses* to which FRAND terms must be extended. According to Qualcomm, these clauses mean that FRAND terms must be offered only to manufacturers of end-user products and cellular infrastructure—not to component manufacturers. Ironically, under Qualcomm’s argument, Qualcomm itself (as a component manufacturer) would *never* be entitled to FRAND licenses for other companies’ SEPs that implement the TIA or ATIS standards.

Regardless, Qualcomm’s argument fails on its own terms. The argument hinges on two premises: first, that Qualcomm must make FRAND licenses available only to manufacturers who make products that *fully* “implement” or “practice” a TIA or ATIS standard, and, second, that only a complete end-user product or cellular

infrastructure can fully implement those standards. Qualcomm Br. 133. Both premises are incorrect.

Qualcomm’s first premise—that FRAND licensees must *fully* implement the TIA and ATIS standards—rests on fundamental misinterpretations of the TIA and ATIS IPR policies. This is particularly clear with respect to the TIA policy. As the district court recognized, the TIA policy “expressly contemplates that a TIA standard may have ‘*portions*’ … , and that an applicant may receive a license as necessary to practice ‘*any*’ portion of a TIA standard.” 1ER272 (emphases added). It is indisputable that modem chips practice at least “portions” of TIA standards—in fact, they practice the vast majority of the technology essential to implementing those standards. And even if they did not, the TIA’s policy guidelines independently state that “a willingness to license all applicants *except for competitors*” is a FRAND violation. ECF No. 792-2, Ex. 3 at 4 (emphasis added). Accordingly, it is incontrovertible that Qualcomm violates its FRAND obligations where, as here, it refuses to license *competing* component manufacturers.

Even putting aside those aspects of the TIA policy, neither policy’s field-of-use limitation is susceptible to Qualcomm’s interpretation. Those limitations require only that applicants use their licenses “*for the purpose* of implementing” an ATIS standard or, equivalently, “*for the practice*” of a TIA standard. *See For,* The

American Heritage College Dictionary 531 (3d ed. 2000) (“Used to indicate the object, aim, or purpose of an action or activity: *for sale*.”).

Modem chip manufacturers and manufacturers of end-user products plainly satisfy that requirement, because they both make and sell products “for the purpose” of facilitating *consumers’* implementation of those standards. See Qualcomm Opp’n to FTC Mot. for Partial Summ. J. 16, ECF No. 879 (modem chips “facilitate compliance with a standard”). Manufacturers of end-user products do so by making the products that consumers use to implement the standards, and modem chip manufacturers do so by making (in Qualcomm’s words) “the heart” of those standards-compliant products. ECF No. 893-2, Ex. 8 at 4. It would be nonsensical to hold that a cell phone, for example, is manufactured “for the purpose” of implementing the TIA and ATIS standards, but that the component which embodies and practices the very technologies that enable the cell phone to communicate in accordance with the standard is not.

This Court’s precedents support that interpretation. In a series of cases, this Court interpreted FRAND obligations with a field-of-use limitation similar to those at issue here. The limitation required applicants “to use the patented material necessary in order to manufacture, use, and/or sell implementations of the [standard].” *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 876 (9th Cir. 2012). Applying Qualcomm’s interpretation to that policy, the FRAND obligations would

have extended only to businesses that “manufacture,” “use,” or “sell” end-user products or cellular infrastructure.

Yet this Court stated that the policy’s “language *admits of no limitations* as to who or how many applicants could receive a license.” *Microsoft Corp.*, 696 F.3d at 884 (emphasis added). Rather, SEP holders must “offer RAND licenses to *all seekers*” and “cannot refuse a license to a manufacturer who commits to paying the RAND.” *Microsoft III*, 795 F.3d at 1031, 1033 (emphasis added). This Court’s repeated, unequivocal descriptions of that policy make no sense if the policy was in fact subject to a gaping component-manufacturer exception.⁴

This Court therefore need look no further than the plain terms of Qualcomm’s FRAND commitments to affirm the district court’s conclusion that Qualcomm is obligated to license competing component manufacturers on FRAND terms. *See AIU Ins. Co. v. Superior Court*, 51 Cal. 3d 807, 822 (1990) (meaning of contract “is to be inferred, if possible, solely from the written provisions of the contract”). Even if there were any ambiguity, however, Qualcomm’s prior interpretation of its

⁴ Other courts have interpreted similar FRAND obligations the same way. *See, e.g., Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1230 (Fed. Cir. 2014) (SEP holder subject to IEEE FRAND obligations “cannot have … [a] policy” of “not licensing others to use the invention or … granting licenses under special conditions”).

FRAND obligations and the purpose animating those obligations would dispel any doubt that they apply to manufacturers of components and end-user products alike.

Record evidence shows that Qualcomm's own lawyers and executives understood that its FRAND obligations extend to component manufacturers. In a 1999 internal email, Steve Altman, then a Qualcomm lawyer and later the company's President, admitted that Qualcomm's FRAND obligations "would make it difficult to argue that we have the right to refuse to license [Intel]," then a competing component manufacturer. ER127. And in a 2012 meeting with the Internal Revenue Service, a senior Qualcomm executive acknowledged that refusing to license a rival modem chip manufacturer is "not a great, you know, position to be in in terms of defending yourself against, you know, claims that you've broken those promises to make the technology available." *Id.* Qualcomm's "consistent prior interpretation of [the] contract[s]" is probative evidence of their meaning. *Turlock Irrigation Dist. v. Zanker*, 140 Cal. App. 4th 1047, 1056 (2006).

In addition, reading a component-manufacturer exception into Qualcomm's FRAND obligations would undermine their purpose of preventing anticompetitive exclusion. *See Cty. of Marin v. Assessment Appeals Bd.*, 64 Cal. App. 3d 319, 325 (1976) (contract "is to be interpreted so as to give effect to the main purpose of the contract and not to defeat the mutual objectives of the parties"). As this case demonstrates, extending FRAND terms to all comers ensures that SEP holders will

not be able to exclude competitors from the marketplace or impose supracompetitive surcharges on the price of rivals’ products.

Indeed, as will be discussed below, a component-manufacturer exception would render collective standard-setting unlawful under the antitrust laws, as it would permit concerted action among competitors to be used as a vehicle for excluding rivals. Such a construction is to be avoided under settled contract-law principles. Cal. Civ. Code § 1643 (“A contract must receive such an interpretation as will make it lawful”).

The second premise of Qualcomm’s argument—that only end-user products and cellular infrastructure can “implement” standards—is equally meritless. It is ordinary usage in the industry to say that modem chips “implement” standards. As Qualcomm’s co-founder admitted, the vast majority of cellular technologies are “implemented” within the modem chip. *See* ECF No. 893-2, Ex. 1 (Deposition of Irwin Jacobs) at 391–401 (admitting that various “foundational” cellular technologies are “implemented” in modem chips); *see also e.g.*, Muhammad Najam ul Islam, *Flexible Baseband Architecture Design & Implementation for Wireless Communication Systems* iii (2010), <https://bit.ly/2N8A6Km> (“baseband [i.e., modem chip] architecture is adept in *implementing* 2G, 3G, 4G, broadcast communication and wireless LAN standards”) (emphasis added). Other industry participants likewise refer to cellular technologies as being “implemented within a

[modem] chip.” ER61 (Samsung); *see also* ER172 (Huawei: “Qualcomm’s essential patents are mostly implemented by chipset”).⁵

In short, both the terms of Qualcomm’s FRAND obligations and the most pertinent secondary interpretive considerations lead to the same conclusion: that Qualcomm breached its FRAND obligations by refusing to license its SEPs on FRAND terms to competing modem chip manufacturers.

III. Qualcomm’s Refusal to License Competing Chip Manufacturers on FRAND Terms Violates the Antitrust Laws.

Qualcomm’s FRAND violations are not only contractual breaches, but also violations of the Sherman Act. To prove monopolization under Section 2 of the Sherman Act, the FTC must establish: (1) “the possession of monopoly power in the relevant market,” (2) the acquisition or maintenance of a monopoly through anticompetitive conduct; and (3) “anticompetitive effect”—that is, effects that “harm the competitive *process* and thereby harm consumers.” *United States v. Microsoft Corp.*, 253 F.3d 34, 50, 58 (D.C. Cir. 2001).

On appeal, Qualcomm does not dispute that it possesses monopoly power. In fact, Qualcomm possesses monopoly power in two separate sets of markets: (1) the markets for its SEPs, and (2) the markets for CDMA and premium LTE modem

⁵ This evidence also reinforces that modem chips, as already discussed (*supra* at 13–14), implement at least “portions” of cellular standards, which is all the TIA policy requires. 1ER261–62.

chips. The former monopoly exists because SEPs for cellular standards cannot be avoided by any supplier of cellular products. *See Microsoft III*, 795 F.3d at 1031. The latter monopoly exists because, as the district court found, Qualcomm for years has owned a dominant share of the CDMA and premium LTE modem chip markets—markets with significant barriers to entry—and competitors have lacked the ability to discipline Qualcomm’s prices. ER25–42.

Qualcomm instead argues on appeal that its repeated refusals to license competing chip manufacturers on FRAND terms do not constitute anticompetitive conduct because “antitrust law imposes no duty to deal” except under the circumstances identified in the Supreme Court’s *Aspen Skiing* decision. Qualcomm Br. 48; *Aspen Skiing Co., v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985).

Qualcomm is wrong. Although *Aspen Skiing* may provide one avenue to antitrust liability, it is not the exclusive one. That is because Qualcomm’s FRAND obligations are more than mere contractual duties to deal—they are also obligations arising by operation of the antitrust laws. FRAND obligations are *necessary* to render lawful the collective standard-setting process that, but for the existence of FRAND obligations, would confer unearned monopoly power on the SEP holders that participate in and benefit from that concerted activity. Qualcomm’s failures to satisfy those antitrust duties therefore constitute anticompetitive conduct. And the

record amply supports the district court’s finding that Qualcomm’s refusals to deal have had anticompetitive effects.

A. Qualcomm Has an Antitrust Duty to License Competing Chip Manufacturers on FRAND Terms.

Qualcomm’s SEPs are the product of concerted action among competitors. Qualcomm, as a member of standard-setting organizations, negotiated with other members (including its competitors) to adopt standards that incorporate technologies over which it claims to possess patents. The activities of standard-setting organizations, like all forms of concerted action among competitors, “have a serious potential for anticompetitive harm” and therefore “have traditionally been objects of antitrust scrutiny.” *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 500 (1988); *see also* Herbert Hovenkamp et al., *IP and Antitrust* § 35.02[D] (2018).

Here, as already discussed, the risks of anticompetitive harm are manifest. *See supra*, at 3–8. The cellular standards that Qualcomm’s SEPs cover were designed to be—and have been—uniformly adopted in the telecommunications industry. It is impossible to sell a cellular product in the United States that does not comply with these standards, because such a product could not communicate with any other manufacturer’s products. These cellular standards were designed to induce—and have induced—trillions of dollars of investment by industry participants. Unless FRAND commitments are imposed and enforced, the outcome of the standard-setting process would therefore be to empower Qualcomm (and other

SEP holders) to exclude competitors and charge supracompetitive prices based on unearned monopoly power that is created, not by the SEPs' intrinsic technological value, but by the effectively mandatory nature of their use.

Standard-setting organizations are not free under the antitrust laws to unleash such collectively generated anticompetitive harms on the marketplace. Rather, as the Supreme Court has explained, standard-setting organizations must adopt “safeguards sufficient to prevent the standard-setting process from being biased by members with economic interests in restraining competition.” *Allied Tube*, 486 U.S. at 509. Otherwise, a standard-setting organization “might … be viewed as a naked agreement among competitors not to manufacture, distribute, or purchase certain types of products.” *Broadcom*, 501 F.3d at 309.

In related contexts, hornbook antitrust law recognizes that persons engaged in conduct with procompetitive and anticompetitive effects *must* adopt a “substantially less restrictive alternative means of accomplishing [their] legitimate procompetitive purposes.” *O'Bannon v. NCAA*, 802 F.3d 1049, 1075 (9th Cir. 2015); *see also Bhan v. NME Hosps., Inc.*, 929 F.2d 1404, 1413 (9th Cir. 1991) (same); C. Scott Hemphill, *Less Restrictive Alternatives in Antitrust Law*, 116 Colum. L. Rev. 927, 937 (2016) (collecting sources applying less-restrictive-alternative test). In other words, if there are “other and better ways—so-called less restrictive alternatives—by which the collaborators can achieve their legitimate objectives with fewer harms to

competition,” then the collaborators must adopt those other and better ways. *Bhan*, 929 F.2d at 1410 n.4 (quoting 7 Philip Areeda, *Antitrust Law* ¶ 1502, at 371 (1986)).

By the same token, antitrust law requires participants in collective private standard-setting activities to comply with FRAND obligations (or another more-protective safeguard). Failure to do so would create the potential for anticompetitive effects that are not necessary to the achievement of the legitimate goals of standard-setting. FRAND obligations serve as “a bulwark against unlawful monopoly” by SEP holders, *Broadcom*, 501 F.3d at 305, while still allowing standard-setting organizations to fulfill all of their procompetitive purposes. Thus, absent other equally or more effective safeguards, FRAND obligations are *necessary* as a matter of antitrust law to render the standard-setting process lawful where, as here, the concerted adoption of an industry standard would otherwise confer monopoly power on a standard-setting participant. See Herbert Hovenkamp et al., *IP and Antitrust* § 35.05[B] (2018) (FRAND “commitment gives rise to an antitrust duty to deal with competitors on FRAND terms”); see also Melamed & Shapiro, *supra*, at 2134–37.

Moreover, to fully address the competitive risks created when standard-setting organizations establish industry standards that incorporate their own members’ patented technologies, FRAND obligations must extend to *all* industry participants, including competitors. Otherwise, the collective action of participants in standard-setting organizations would empower a SEP holder to acquire or maintain a

monopoly over a standard-compliant product by completely excluding competitors that it refused to license or impairing competitors’ ability to compete by imposing non-FRAND royalties on their products.

Accordingly, Qualcomm’s obligation to make SEP licenses available to competitors on FRAND terms is not dependent on a showing that, as in *Aspen Skiing*, Qualcomm’s deviation from a prior course of conduct “suggest[s] a willingness to forsake short-term profits to achieve an anticompetitive end.” *Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 409 (2004). Nor does Qualcomm’s duty to deal arise from the mere fact that it has breached a contractual obligation. Rather, Qualcomm’s duty to deal with competitors on FRAND terms arises because, absent compliance with such a duty, Qualcomm would be in a position to exploit the monopoly power conferred upon it through concerted action in which it participated, in violation of the very constraint—its FRAND obligations—that was necessary to make its concerted action lawful under the antitrust laws in the first place. Qualcomm’s proven FRAND violations therefore confirm that it has engaged in anticompetitive conduct, separate and apart from the district court’s finding of a duty to deal under *Aspen Skiing*. The remaining question is whether Qualcomm’s anticompetitive conduct had anticompetitive effects sufficient to support liability under Section 2 of the Sherman Act.

B. Qualcomm’s Refusals To License on FRAND Terms Have Had Anticompetitive Effects.

Qualcomm’s refusals to license competitors in accordance with its FRAND obligations have had serious anticompetitive effects. Those practices facilitate and make effective the central pillar of Qualcomm’s monopoly-maintenance scheme: its coercion of cell phone manufacturers to pay supracompetitive, above-FRAND royalties for Qualcomm’s SEPs and to agree to impose those same royalties on Qualcomm’s competitors. Through this mechanism, Qualcomm’s supracompetitive royalties act as a surcharge on competitors’ modem chips, thereby effectively raising competitors’ prices and excluding them from the relevant modem chip markets.

As the district court found, Qualcomm requires cell phone manufacturers, as a condition of purchasing modem chips, to separately license Qualcomm’s SEPs at supracompetitive, non-FRAND rates, and to agree to pay those inflated royalties not only on modem chips purchased from Qualcomm, but also on modem chips purchased from any Qualcomm competitors. ER46–115, 158–84. Qualcomm coerces cell phone manufacturers into compliance with this scheme, and prevents them from seeking to enforce its FRAND obligations, by threatening to cut off (and actually cutting off) the supply of modem chips unless they agree to Qualcomm’s terms. ER46–115. The manufacturers have “no option but to agree to whatever Qualcomm demand[s]” because modem chips are essential to the viability of their products and Qualcomm has a monopoly over chip supply. ER50; *see also id.* at

60–61 (Samsung executive stating that Qualcomm is “giving manufacturers no choice but to accept”).

The district court found that the effect of this coercive scheme is to allow Qualcomm to impose its supracompetitive SEP pricing on its *competitors’* modem chips: “Because Qualcomm receives [SEP] royalties on *any* handset sale, even when that handset contains a *rival’s* modem chip,” Qualcomm’s supracompetitive SEP royalties “impose an artificial and anticompetitive surcharge on the price of rivals’ modem chips.” ER46, ER184–87 (emphases added); *see also* ER193 (Wistron executive: “even if we’re using non-Qualcomm chips, we would still have to pay the onerous royalty that Qualcomm dictated”). Qualcomm’s scheme effectively subjects cell phone manufacturers to the economic equivalent of a price-fixing cartel by raising the prices of its competitors’ products as well as its own. The principal difference is that, whereas cartel members share the supracompetitive profits generated by price fixing, here Qualcomm receives *all* the benefit of the inflated royalties paid by cell phone manufacturers, regardless of whose modem chips they purchase.

Qualcomm’s anticompetitive scheme also has the effect of making Qualcomm’s modem chips appear cheaper relative to competitors’ chips because it shifts part of the price of a Qualcomm modem chip to the SEP royalty. The resulting

SEP royalty surcharges make it “prohibitively expensive” for cell phone manufacturers to use competing modem chip suppliers. ER98 (Apple COO).

Qualcomm’s refusal to license its SEPs to competitors on FRAND terms is an essential element of this overall scheme to exclude competitors by raising the effective prices of their competing modem chips. If Qualcomm granted licenses to its competitors on FRAND terms, it could not extract a second, supracompetitive royalty from cell phone manufacturers for using its competitors’ modem chips, because Qualcomm’s patent rights would have been exhausted by its competitors’ authorized sales of their licensed chips. *See Quanta Comput., Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 638 (2008). Moreover, Qualcomm could not coerce its competitors to pay above-FRAND royalties because its threats to cut off chip supply would have no coercive effect on competitors. As a result, Qualcomm would lose its ability to impose its supracompetitive royalties on the prices of its rivals’ modem chips, thereby enabling those rivals to subject Qualcomm to unfettered price competition.

Qualcomm’s response (at 132) that “it does not assert its SEPs against modem chipmakers” is beside the point. As already explained, it is Qualcomm’s coercion of cell phone manufacturers to effectively raise its competitors’ prices, reinforced by its refusal to *license* those competitors, that harms competition and violates the antitrust laws. Qualcomm’s mere forbearance from suing competitors in no way lessens those exclusionary effects or absolves its FRAND violations.

The district court correctly found that Qualcomm’s repeated refusals to deal with competitors on FRAND terms over the past decade and a half contributed to the anticompetitive effects of Qualcomm’s scheme. *See* ER119–25 (Qualcomm refused to license 9 different rivals on 12 separate occasions between 2004 and 2018). Qualcomm’s FRAND violations, the district court found, harmed competition by “prevent[ing] rivals’ entry, promot[ing] rivals’ exit, and hamper[ing] Qualcomm’s rivals in the marketplace.” ER191–94. The district court’s findings easily support its conclusion that Qualcomm’s FRAND violations had anticompetitive effects—effects that are the natural result of Qualcomm’s abuse of the monopoly power conferred upon it through its concerted action during the standard-setting process.

* * *

In sum, Qualcomm’s repeated FRAND violations constitute anticompetitive conduct because Qualcomm’s FRAND obligations are independent antitrust duties to deal that arise from Qualcomm’s participation in the standard-setting process. Because those violations have had the anticompetitive effects of excluding Qualcomm’s rivals and raising their costs, this Court should affirm the district court’s conclusion that Qualcomm’s refusals to deal violate the antitrust laws.

IV. Qualcomm’s National Security Concerns Are Meritless.

To “unfetter [the] market” from Qualcomm’s ongoing, anticompetitive licensing practices, the district court correctly issued an injunction requiring (among other things) that Qualcomm make SEP licenses available to competing modem chip manufacturers on FRAND terms. ER230; *Ford Motor Co. v. United States*, 405 U.S. 562, 577 (1972). Qualcomm assails the injunction in part by arguing that the district court should have considered whether “the injunction would substantially harm national security interests by undermining U.S. leadership”—by which it means Qualcomm’s leadership—“in forthcoming 5G technology.” Qualcomm Br. 34, 123–24. That argument is meritless.

Qualcomm obtained its leadership position by unlawfully excluding *other U.S. competitors* through its anticompetitive conduct. For example, Qualcomm “delayed Intel’s entry into the CDMA and premium LTE modem chip markets,” and forced Broadcom (then a U.S. company) to exit the modem chip market by refusing to offer FRAND terms to each company. ER120–21, ER122–23. This Court should not allow Qualcomm to use purported national security concerns arising out of its own anticompetitive conduct as a means of escaping the consequences of that conduct.

Moreover, neither Qualcomm nor any of its amici explains why requiring Qualcomm to comply with the antitrust laws would impair Qualcomm’s ability to

compete effectively, let alone impair national security. The claims are no more than *ipse dixit*, empty invocations of a mantra that has no basis in fact. What *is* clear, however, is that allowing Qualcomm to skirt antitrust enforcement would drive a stake through the “heart of our national economic policy,” which “long has been faith in the value of competition.” *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 695 (1978).

By contrast, enjoining Qualcomm will advance national security in the long run by opening the door for other U.S. companies, including CCIA’s members, to enhance their participation in the development of cellular technologies without further anticompetitive interference by Qualcomm. That will diversify and strengthen U.S. participation in 5G (and beyond) while avoiding the risks inherent in relying on one company to represent U.S. interests in an increasingly global marketplace. See Michael Chertoff, *Qualcomm’s Monopoly Imperils National Security*, Wall St. J. (Nov. 24, 2019), <https://on.wsj.com/2rs1U3G>.

CONCLUSION

For the foregoing reasons, this Court should affirm the judgment of the district court and hold that Qualcomm's repeated refusals to license competing chip manufacturers on FRAND terms violate both its contractual obligations and the antitrust laws.

Dated: November 27, 2019

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 29, I certify that the attached brief is proportionately spaced, has a typeface of 14 points, and complies with the word count limitations set forth in Fed. R. App. P. 29(a)(5). This brief has 6,331 words, excluding the portions exempted by Fed. R. App. P. 32, according to the word count feature of Microsoft Word used to generate this brief.

Dated: November 27, 2019

By: /s/ Thomas G. Hungar
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CERTIFICATE OF SERVICE

I hereby certify that I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Ninth Circuit by using the appellate CM/ECF system on November 27, 2019. I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

Dated: November 27, 2019

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