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Brief of Amicus Curiae Professor Jorge L. Contreras In Support Of Appellee and Affirmance in FTC v. Qualcomm

Jorge L. Contreras

No. 19-16122

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

FEDERAL TRADE COMMISSION,

Plaintiff – Appellee,

v.

QUALCOMM INCORPORATED,

Defendant – Appellant.

Appeal from the United States District Court
for the Northern District of California,
The Honorable Lucy H. Koh, District Judge
Case No. 5:17-cv-00220-LHK

BRIEF OF *AMICUS CURIAE* PROFESSOR JORGE L. CONTRERAS IN SUPPORT OF APPELLEE AND AFFIRMANCE

Filed Unopposed by the Federal Trade Commission and Qualcomm Incorporated Pursuant to Ninth Circuit Rule 29-2(a)

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IDENTITY AND INTEREST OF *AMICUS CURIAE*

Amicus Curiae Jorge L. Contreras, a Presidential Scholar and Professor of Law at the University of Utah S.J. Quinney College of Law, is an internationally-recognized expert on the legal aspects of technical standardization, including intellectual property and antitrust issues. He has edited five books and published more than fifty law review articles and book chapters on these topics and has won numerous awards for his scholarship and teaching, including the IEEE Standards Association's 2018 Standards Education Award and first prize in the Standards Engineering Society (SES) 2011 and 2015 paper competitions.

Professor Contreras is licensed to practice law in the District of Columbia and has represented a number of standards development organizations (SDOs) and companies involved in standardization. Among these, he served for twenty years as the principal legal counsel for the Internet Engineering Task Force (IETF), the primary SDO responsible for standards relating to the Internet. He has also authored or co-authored numerous research studies on standards and standardization, including for the National Academies of Science, the National Institute of Standards and Technology (NIST), and the European Commission.

He holds a B.S.E.E. degree in electrical and computer engineering from Rice University and is a Senior Member of the Institute of Electrical and Electronics Engineers. His J.D. from Harvard Law School was also conferred *cum laude*.

Professor Contreras has no personal interest in the outcome of this case but has a professional interest in seeing that this case, which has provoked heavy lobbying and controversy, is decided in accordance with longstanding and well-settled principles of law and with a full understanding of the historical context of industry standard-setting.

RELEVANCE OF PROFESSOR CONTRERAS'S AMICUS BRIEF

This brief is filed on behalf of Professor Contreras and not on behalf of his academic institution. Professor Contreras does not represent any of the parties and has no vested interest in the outcome of this litigation. He writes in support of the FTC and affirmance of the district court's decision. As noted below, Professor Contreras takes issue with arguments raised by Qualcomm, the Department of Justice ("DOJ"), the Department of Defense ("DOD"), and the Department of Energy ("DOE"). In Professor Contreras' view, the arguments raised by Qualcomm and these federal agencies mischaracterize the import of the district court's ruling and the applicable legal standards.

STATEMENT OF AUTHORSHIP AND CONSENT

Pursuant to Federal Rule of Appellate Procedure 29(a)(4)(E), *amicus curiae* Jorge L. Contreras certifies that no party or party's counsel authored this brief in whole or in part, no party or party's counsel contributed money that was intended to fund preparing or submitting this brief, and no person or entity—other than

amicus curiae or his counsel—authored the brief or made a monetary contribution to the preparation or submission of this brief.

Appellant Qualcomm Incorporated ("Qualcomm" or "Appellant") and Appellee Federal Trade Commission ("FTC" or "Appellee") have consented to the filing of Professor Contreras's amicus brief. On November 19, 2019 Tom Goldstein, counsel for Qualcomm, stated that Qualcomm consents to Professor Contreras's participation as amicus. Counsel also contacted Michele Arington, counsel for the FTC. On November 20, 2019, Ms. Arington stated that the FTC consents to Professor Contreras's amicus filing.

INTRODUCTION

Technical interoperability standards connect billions of devices around the world in a manner that is largely invisible to the consumer. The effectiveness and global reach of such standards derives in large part from the fact that they are developed collaboratively within international standards development organizations (SDOs) that are open to all participants and that make the resulting standards publicly accessible.

Standards are often covered by patents held by the firms that participated in their development.[1] In order to encourage the broad adoption of standards and to prevent patent owners from "blocking implementation of a given standard," ER252, many SDOs require their participants to license any patents that are essential to the implementation of the SDO's standards (known as standards-essential patents or SEPs) to anyone wishing to incorporate the standard into a product. U.S. Dept. Justice & Fed. Trade Comm'n, Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition 45-48 (2007). Some SDOs require that those licenses be granted on a royalty-free basis (e.g., the SDOs responsible for Bluetooth, USB and most Internet standards), but other SDOs (e.g., the SDOs responsible for Wi-Fi and wireless telecommunications standards) permit patent holders to charge product manufacturers a royalty that is "reasonable and nondiscriminatory" (RAND) or "fair, reasonable and nondiscriminatory" (FRAND).[2] Justus Baron & Daniel F. Spulber, *Technology Standards and Standard Setting Organizations: Introduction to the Searle Center Database*, 27 J. Econ. & Mgmt. Strategy 462, 479, tbl. 4 (2018).

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[1] *See, e.g.,* Justus Baron & Tim Pohlmann, *Mapping Standards to Patents Using Declarations Standard-Essential Patents*, 27 J. Econ. & Mgmt. Strategy 504, 521, tbl. 7 (2018) (the 4G LTE standard is covered by 45,279 patents; the 3G UMTS standard is covered by 39,748 patents).

[2] Courts have generally treated the terms RAND and FRAND as synonymous. For consistency with the briefing and opinions in this case, this brief uses the term FRAND.

As described by the district court, Qualcomm participated in the development of 3G and 4G wireless telecommunication standards under the auspices of two SDOs, the Telecommunications Industry Association ("TIA") and the Alliance for Telecommunications Industry Solutions ("ATIS"). ER253. Each of these SDOs had adopted intellectual property rights policies (IPR Policies) that required their participants to grant licenses of SEPs to implementers of their standards on FRAND terms. Yet, over the course of several years, Qualcomm refused to license its SEPs to numerous actual and potential modem chip rivals including MediaTek, Project Dragonfly (a joint venture of NTT DoCoMo, Samsung and several Japanese manufacturers), Samsung, VIA Telecom, Intel, HiSilicon (a subsidiary of Huawei), Broadcom, Texas Instruments, and LGE. ER1280-90. The district court also found that when Qualcomm did license its SEPs to smartphone vendors, its royalty rates were "unreasonably high." ER1211.

Accordingly, the district court found that Qualcomm violated its FRAND commitments to ATIS and TIA, as well as Sections 1 , and Section 5 of the FTC Act, 15 U.S.C. § 45(a)and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2 , and Section 5 of the FTC Act, 15 U.S.C. § 45(a). ER1381-82. As a remedy, the district court entered an injunction that, *inter alia*, required Qualcomm to license its SEPs on FRAND terms to rival chip makers, and to renegotiate its existing SEP licenses to reflect reasonable royalty rates. ER1391, ER1393-95. Qualcomm now appeals.

This brief seeks to draw to the Court's attention historical, practical and policy matters pertaining to technical standardization that bear on the arguments made on appeal by Qualcomm and its federal agency *amici curiae*. In particular, this brief argues that: (1) the district court was correct to conclude that Qualcomm is required to license its SEPs to all applicants on FRAND terms, (2) the "reasonable" royalty level required by Qualcomm's commitments to the relevant SDOs should not be measured by Qualcomm's own royalties charged to others, and (3) enforcement of the district court's injunction against Qualcomm will not threaten U.S. national security, and the arguments made to that effect mischaracterize or misunderstand the nature of both patent law and standards.

Qualcomm has undeniably played a significant role in the development of wireless telecommunications technology. However, the antitrust laws must be enforced rigorously and even-handedly to eliminate anticompetitive conduct. An enterprise that has engaged in anticompetitive conduct should not be excused simply because it contributes to the national economy or to national infrastructure or defense. Giving Qualcomm special treatment in this case would open the door to such arguments in practically every antitrust case involving major industrial or technology players. And, as such, the force of the antitrust laws would be severely weakened to the detriment of American competition and consumers. Accordingly, this brief urges the Court to affirm the decision and order of the district court.

ARGUMENT

I. THE DISTRICT COURT CORRECTLY CONCLUDED THAT QUALCOMM WAS REQUIRED TO LICENSE ITS SEPS TO ALL APPLICANTS

The district court found that Qualcomm was required to license its SEPs on FRAND terms to rival modem chip suppliers pursuant to the IPR Policies of ATIS and TIA, ER1395, and that Qualcomm's refusal to grant such licenses was evidence that it violated the antitrust laws. *Id*. In its Opening Brief, Qualcomm challenges both of these conclusions, arguing that, at a minimum, there is a material question of fact as to the meaning of the ATIS and TIA policies which precludes summary judgment. This section draws the Court's attention to historical and other factors supporting the district court's interpretation of the ATIS and TIA Policies, which require Qualcomm to license its SEPs to "all applicants," including rival modem chip suppliers.

A. FRAND Commitments Have Their Origins in Remedial Patent Access Requirements

Commitments to license patents on FRAND terms first appeared during World War II in remedial orders intended to address anticompetitive arrangements involving patents. Jorge L. Contreras, *A Brief History of FRAND: Analyzing Current Debates in Standard-Setting and Antitrust through a Historical Lens*, 80

Antitrust L.J. 39, 49-51 (2015).[3] In more than one hundred of these orders entered from the 1940s through the 1970s, the patent holder was required to grant licenses (on a paid or a royalty-free basis) to "all applicants." *Id*. at 41, 74. The purpose of this requirement was to remove barriers that the patent holder had improperly imposed on competition, thereby making the patented technology available to all who wished to use it. *See id.* at 74. Thus, in *Hartford-Empire Co. v. United States*, 323 U.S. 386, *modified by* 324 U.S. 570 (1945), the Supreme Court affirmed the lower court's order that each defendant patent holder grant to any applicant a license to make, have made, use and/or sell any patented machine at "a reasonable royalty." 323 U.S. at 413.

B. SDO-Based FRAND Commitments are Widely Understood to be Universal Access Requirements

Like their historical antecedents, voluntary SDO-based FRAND commitments are mechanisms for ensuring broad access to patented technologies. In the early twentieth century, there was a general discomfort with including patented technologies in industry standards. The American Standards Association (ASA) adopted its first policy relating to patents in 1932, stating that "as a general

[3] Unlike today's FRAND commitments, which are made voluntarily by SEP holders, these early FRAND commitments were largely imposed on patent holders as remedies for antitrust law violations. Nevertheless, it is informative to consider these early remedial FRAND orders, as the language of the FRAND commitments themselves is remarkably similar to today's SDO-based FRAND commitments and both serve a market-opening function.

proposition patented designs or methods should not be incorporated in standards," unless the patentee was "willing to grant such rights as will avoid monopolistic tendencies." Contreras, *FRAND History*, *supra* at 43, n.17.

By 1959, ASA updated its policy to provide that "[s]tandards should not include items whose production is covered by patents unless the patent holder agrees to and does make available *to any interested and qualified party* a license on *reasonable terms*…." *Id*. at 43 (emphasis added). And by 1969 the American National Standards Institute (ANSI), the successor to ASA, provided that if a patent covers any portion of a proposed American National Standard, the relevant SDO must obtain an assurance from the patent holder that a license will be made available to applicants under reasonable terms and conditions "that are demonstrably free of any unfair discrimination." *Id*. at 44, n. 26. Through all of these stages of development, it is clear that the FRAND commitment is intended to ensure broad access to patented technologies included in industry standards.

When considering the FRAND commitment imposed by the International Telecommunications Union (ITU), this Court previously reasoned that the SEP holder promised to "grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis," and that such language "admits of no limitations as to who or how many applicants could receive a license." *Microsoft Corp. v. Motorola, Inc*., 696 F.3d 872, 884 (9th Cir. 2012) [hereinafter *Microsoft*

II]. Three years later, this Court reiterated this principle, holding that under the ITU Policy, a "SEP holder cannot refuse a license to a manufacturer who commits to paying the [F]RAND rate." *Microsoft Corp. v. Motorola Inc*., 795 F.3d 1024, 1031 (9th Cir. 2015) [*Microsoft III*]. Thus, the access enabling function of FRAND commitments has been widely recognized, including by this Court.

C. The Unambiguous Language of the ATIS and TIA Policies Requires Participants to License SEPs to All Applicants

The language of the ATIS and TIA IPR Policies to which Qualcomm agreed to abide clearly follows the historical treatment of FRAND commitments as access requirements. The TIA IPR Policy states that "[a] license under any Essential Patent(s), the license rights which are held by the undersigned Patent Holder, will be made available to *all applicants* under terms and conditions that are reasonable and non-discriminatory." ER252 (emphasis added). And the ATIS Policy simply mirrors the ANSI policy discussed above, requiring that "applicants", without limitation, have access to licenses from SEP holders. ER253. As a result, the TIA and ATIS policies must be understood as requiring SEP holders to grant licenses on FRAND terms to all applicants. As such, Qualcomm's refusal to license its SEPs to modem chip suppliers violates these policies.[4]

[4] As pointed out by the District Court, Qualcomm itself has viewed SDO FRAND commitments as requiring licensing to all applicants in contexts outside the present litigation. ER1291-94.

D. Qualcomm Cannot Comply with its FRAND Commitments by Unilaterally Refraining from Asserting its SEPs against Applicants for Licenses

Qualcomm argues in its Opening Brief that it cannot be deemed to have violated its FRAND commitments because "it does not assert its SEPs against modem chipmakers." Opening Brief for Appellant Qualcomm at 146, *FTC v. Qualcomm Inc.*, No. 19-16122 (9th Cir., Aug. 23, 2019), ECF No. 80. In other words, because Qualcomm does not *enforce* its SEPs against chip makers, it should be deemed to have complied with its obligation to grant them a license to its patented technology. Or, in other words, by licensing its SEPs to end product (smartphone) manufacturers, Qualcomm effectively gives the suppliers of the chips included in those end products access to its SEPs. Qualcomm Opening Br. at 44-45 ("because Qualcomm enforces its SEPs at the OEM level, its chip rivals have access to Qualcomm's standardized technology").

But as Qualcomm points out elsewhere, there is a clear legal difference between granting a license to an applicant, and simply ignoring that applicant's request for a license. Namely, the recipient of a license has a legal immunity from suit, whereas the ignored applicant continues to infringe Qualcomm's patents and runs a continual risk that Qualcomm might – as it has done in the past[5] – sue for

[5] For example, Qualcomm filed various actions against its then-rival Broadcom in the mid-2000s, including claims for infringement based on SEPs relating to

infringement. That is, with no license from Qualcomm, the suppliers of chips that embody Qualcomm's patented technology remain vulnerable to suit, subject only to Qualcomm's unilateral discretion not to sue them. This places chip suppliers in a significantly compromised position and, as the district court noted, "has promoted rivals' exit from the market, prevented rivals' entry, and delayed or hampered the entry and success of other rivals." ER1280. It is simply not the case that Qualcomm's unilateral decision not to assert patents against an applicant is equivalent to granting that applicant a license.

E. Modem Chip Suppliers "Implement" Wireless Telecommunications Standards and are Thus Entitled to Receive FRAND Licenses from Qualcomm

Qualcomm further argues that, even if the ATIS and TIA policies require Qualcomm to grant SEP licenses to all applicants, that requirement is limited to applicants that "implement" or "practice" the relevant standards. Qualcomm Opening Br. at 133. Modem chip suppliers, Qualcomm argues, cannot implement or practice standards for wireless telecommunications: "only a complete cellular device (such as a phone or tablet) or cellular infrastructure (such as a base station) can implement or practice such standards." *Id*. As a result, Qualcomm argues that it

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3GPP's cellular GSM standard, *see* First Amended Complaint, *Qualcomm Inc. v. Broadcom Corp.*, No. 05-cv-1392 (S.D. Cal. Feb. 9, 2006), ECF No. 43, and to the ITU's H.264 standard; and Complaint, *Qualcomm Inc. v. Broadcom Corp.*, No. 3:05-cv-1958 (S.D. Cal. Oct. 14, 2005), ECF No. 1.

has no obligation to grant SEP licenses to rival chip suppliers.

But in today's world of miniaturized, plug-and-play components, the technical protocols that power interoperability standards are, by and large, embodied in chips. A smartphone manufacturer must purchase chips for all of the major interfaces in a phone – Wi-Fi, Bluetooth, GPS, camera, audio, and memory, as well as wireless telecommunications. *See* Martin Sauter, From GSM to LTE-Advanced Pro and 5G: An Introduction to Mobile Networks and Mobile Broadband 61 (3d ed. 2017). While the chips themselves do not enable all of the functionality specified by the standard (e.g., one does not actually speak into a modem chip to make a phone call), these highly complex chips *do* embody the principal technical features of the standard.[6]

The Supreme Court has long held that the sale of an article that partially embodies a patent is sufficient to exhaust the patent if the "only and intended use" of the article is for it to be used in a manner that infringes the patent. *United States v. Univis Lens Co.*, 316 U. S. 241, 250-51 (1942) (sale of lens blanks exhausted patents in finished lenses); *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617, 628 (2008) (patent is exhausted "when the item sufficiently embodies the

[6] Moreover, it is not clear that a smartphone implements the entirety of the relevant standards either, as Qualcomm seems to argue, given that some functionality described in those standards is implemented in base stations and other central facilities.

patent—even if it does not completely practice the patent—such that its only and intended use is to be finished under the terms of the patent."). Thus, in *Quanta*, the Court held that LG's licensing of a patent to Intel for purposes of making a computer chip exhausted LG's patent covering the chip's operation in a computer, even though Intel did not manufacture or sell routine computer components such as memory and buses along with the chips. *Quanta,* 553 U.S. at 630-34. As observed by the Court, "[e]verything inventive about each patent" was embodied in the chip, and as such LG's initial license to Intel exhausted the patent. *Id*. at 633.

The situation in this case is analogous to the one in *Quanta*. Qualcomm's SEPs cover key aspects of 3G/4G wireless telecommunications standards. Those standards are embodied in modem chips manufactured by Qualcomm. In many cases, these chips embody "everything inventive about each patent" (i.e., the protocols and technology necessary to connect to and communicate via a wireless cellular network). While the smartphone manufacturer that buys these chips connects them to routine components such as a power supply and buses, the addition of these elements would not serve to insulate the patents covering the chips from exhaustion. Likewise, the attachment of these routine components to a

modem chip should not be deemed necessary to "implement" or "practice" the wireless telecommunications standard embodied in the chip.[7]

As such, Qualcomm should not be excused from its commitment to license its SEPs to modem chip suppliers simply because they do not provide all of the standard elements of a smartphone. Just as the Univis lens blanks embodied the patented technology in finished lenses, and Intel's computer chips embodied the patented technology in a computer system, the relevant TIA and ATIS wireless telecommunications standards are embodied in Qualcomm's modem chips.

II. QUALCOMM'S DESIRE TO USE ITS OWN ROYALTY RATES TO DETERMINE THE LEVEL OF A "REASONABLE" ROYALTY IS AN EXERCISE IN CIRCULAR REASONING

The district court found that Qualcomm's royalty rates for SEPs were "unreasonably high," putting it in breach of its FRAND commitments and constituting evidence that it violated the Sherman Act. ER1323. In its Opening Brief, Qualcomm argues that the district court erred by failing to assess the reasonableness of Qualcomm's royalty rates using the "best measure" for a reasonable royalty: "Qualcomm's previously established royalty for the same portfolio." Qualcomm Opening Br. at 86. That is, though the district court found that Qualcomm had monopoly power in the modem chip market beginning in

[7] Qualcomm acknowledges that its patents would likely be exhausted if it granted licenses to chip makers. Qualcomm Opening Br. at 45.

2006, Qualcomm's royalty rate for its patent portfolio remained relatively constant both before and after that date, "demonstrating that those royalties were not the result of Qualcomm supposedly leveraging its monopoly power in the relevant chip markets." *Id*. at 86-87. Qualcomm then cites a line of patent damages cases holding that an "established royalty" is "the best measure" of value in a reasonable royalty calculation. *Id*. at 86 (citing, *inter alia*, *Faulkner v. Gibbs*, 199 F.2d 635, 638 (9th Cir. 1952) and *Georgia-Pacific v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970)). In effect, Qualcomm argues that its royalty during the period of monopolization should be compared with its royalty prior to monopolization and, because they are similar, its royalty during the period of monopolization should be deemed "reasonable."

Even if one accepts Qualcomm's premise that a damages-based "reasonable royalty" analysis under 35 U.S.C. § 284 (2012) is appropriate to determine whether a SEP royalty satisfies the patent holder's FRAND commitment, using the patent holder's *own* prior royalties as a benchmark is problematic. As explained by Cotter et al., the use of prior licenses as "comparables" when determining a reasonable royalty can result in a significant "circularity" problem. That is, "if the prior licenses being used as comparables were negotiated in circumstances where the

licensee was subject to holdup[8] … the comparable will reflect holdup … value, not just the value of the patented technology." Thomas F. Cotter et al., *Reasonable Royalties, in* Patent Remedies and Complex Products: Toward a Global Consensus 36 (C. Bradford Biddle et al. eds., 2019).

This issue was recognized by the Supreme Court as early as 1945. In *Hartford-Empire*, the Supreme Court reviewed a remedial order requiring the defendant patent holders to license their patents to all applicants at "standard royalties." The Court held that the term "standard royalties" should be changed to "uniform reasonable royalties" in order to "avoid any misunderstanding" that the patent holders' "present royalties are reasonable." 324 U.S. at 574.

In this case, the district court found that Qualcomm's royalties were "unreasonably high" and that Qualcomm maintained these unreasonable royalty levels despite changes to Qualcomm's patent portfolio and the underlying standards. ER1323-59.[9] While the FTC's antitrust case against Qualcomm focused

[8] The term holdup is used frequently in cases involving technical standards. *See, e.g.*, *Microsoft III,* 795 F.3d at 1031 ("The tactic of withholding a license unless and until a manufacturer agrees to pay an unduly high royalty rate for an SEP is referred to as 'hold-up.'"); *Ericsson, Inc. v. D-Link Sys. Inc.*, 773 F.3d 1201, 1209 (Fed. Cir. 2014) (holdup occurs "when the holder of a SEP demands excessive royalties after companies are locked into using a standard."). *See generally*, Jorge L. Contreras, *Much Ado about Hold-Up*, 2019 U. of Ill. L. Rev. 875 (2019).

[9] The district court did not calculate the precise FRAND royalty that Qualcomm should have charged to any given implementer of the 3G/4G standards. For purposes of the district court's antitrust analysis, it was sufficient to determine that Qualcomm's royalties, based on the evidence, were "unreasonably high."

on the time period beginning in 2006, there is nothing in the record to indicate that Qualcomm's pre-2006 royalties were reasonable. Moreover, the district court notes that Qualcomm's share of the SEPs embodied in relevant standards has steadily declined over time, that its modem chips no longer drive the value of cellular handsets, and that its royalty rates remain higher than those of any other SEP holder. ER1323. These facts alone tend to refute the use of Qualcomm's pre-2006 royalty rates when assessing the reasonableness of its post-2006 royalty rates.

More importantly, Qualcomm seems to argue that the FTC's failure to assert that Qualcomm's pre-2006 conduct violated the antitrust laws implies that Qualcomm's pre-2006 royalties were reasonable. Yet there need not be an antitrust law violation in order for a royalty to exceed the reasonable level mandated by the patent holder's FRAND commitment. While the violation of antitrust law is certainly an indication that a patent holder is not charging a reasonable royalty as required by its FRAND commitment, overcharges can and do occur absent any violation of antitrust law. In fact, in prior cases in which FRAND royalty rates have been assessed by U.S. courts, no antitrust violation was found notwithstanding massive royalty overcharges. *See, e.g., Microsoft III*; *In re Innovatio IP Ventures, LLC Patent Litigation*, No. 11 C 9308, 2013 WL 5593609 (N.D. Ill. Oct. 3,

2013).[10]

Accordingly, Qualcomm's argument that its challenged royalty rates be measured for reasonableness against its pre-2006 royalty rates falls into the circularity flaw identified by Cotter et al., as there is no evidence demonstrating that those pre-2006 royalties were not themselves unreasonable at the time they were imposed.

III. QUALCOMM'S ARGUMENT THAT THE DISTRICT COURT'S REMEDIAL ORDER COULD THREATEN U.S. NATIONAL SECURITY MISCHARACTERIZES BOTH PATENT LAW AND STANDARDS IN THE MARKET

Qualcomm argues that the remedial order imposed by the district court could threaten national security. Qualcomm Opening Br. at 123. In particular, Qualcomm raises concerns regarding the district court's injunction requiring that Qualcomm license rival modem chip suppliers, and that Qualcomm negotiate or renegotiate its licenses with licensed device manufacturers on terms that are reasonable. Such remedies, Qualcomm argues, could reduce Qualcomm's ability to invest in the development of 5G technologies that are critical to U.S. infrastructure and national security. *Id*. at 123-25.

[10] In *Microsoft III*, the SEP holder's royalty demand was approximately 2,000 times higher than the FRAND rate determined by the court. *See* Contreras, *Hold-Up, supra*, at 889. In *Innovatio*, the royalty demand was in some cases more than 300 times higher than the court-determined FRAND rate. *Id.*

The U.S. Department of Justice, in an *amicus* brief filed in this case, echoes these concerns, arguing that "diminishment of Qualcomm's competitiveness in 5G innovation and standard-setting could harm U.S. national security." Brief for Department of Justice as Amicus Curiae Supporting Appellant at 32, *FTC v. Qualcomm Inc*., No. 19-16122 (9th Cir. Aug. 30, 2019), ECF No. 86. The U.S. Departments of Defense and Energy filed statements in an earlier stay proceeding in this Court, making similar arguments. ER319 ¶ 3; ER315-16 ¶ 8-9. In its amicus brief before this Court, the DOJ asks the Court to take judicial notice of the DOD and DOE positions. DOJ Amicus Br. at 3, n. 1.

Yet neither Qualcomm nor the federal agencies supporting it have explained precisely how the district court's injunction would threaten national security. Indeed, one court has held exactly the opposite.[11] This section explains how these concerns are misplaced and reflect a misunderstanding of the role and function of patents and standards in the market.

A. Curtailing a Monopolist's Illegal Practices Should Never Be Viewed as Detrimental to the Public Interest

Throughout the history of the antitrust laws, serious remedies have been

[11] Initial Determination at *108, *In re Certain Mobile Elec. Devices and Radio Frequency and Processing Components Thereof*, USITC Inv. No. 337-TA-1065, 2018 WL 6011829 (Sept. 28, 2018) (finding "a real and palpable likelihood the National Security interests will be jeopardized" by Qualcomm's exclusionary conduct), *rev'd and modified on other grounds*, Commission Opinion, 2019 WL 2635510 (Apr. 5, 2019).

levied against corporate enterprises that have engaged in anticompetitive conduct, even when those enterprises have been at the heart of industries critical to the national infrastructure security. Prominent historical examples have included major antitrust enforcement actions and remedies against large players in the domestic steel, aluminum, oil, lighting, chemical and aviation industries – all of which were, and continue to be, critical to the national interest. *See generally* Tim Wu, The Curse of Bigness: Antitrust in the New Gilded Age (2018); Contreras, *FRAND History*, *supra*, at 49-71. More recently, significant structural remedies have been levied against AT&T and Microsoft, major architects of the U.S. technology infrastructure. Wu*, supra,* at 93-100; Contreras, *FRAND History*, *supra*, at 64-66. In none of these cases did national security concerns soften the remedial measures imposed to address these companies' anticompetitive conduct.

It is undisputed that Qualcomm has made significant contributions to wireless telecommunications technology. But can it truly be said that Qualcomm is more vital to the national interest today than U.S. Steel, Alcoa, Standard Oil, General Electric, AT&T or Microsoft were in their day? Such an assertion would be absurd, no matter how integral Qualcomm may claim to be to the development of 5G and other mobile wireless technologies.

B. Firms That Do Not Emulate Qualcomm's Anticompetitive Business Practices Are Still Profitable and Able to Make Large Investments in R&D and Standardization

It is possible that Qualcomm will become less profitable once it is required to comply with the district court's injunction barring that conduct found by the court to be anticompetitive. Yet this is not to say that Qualcomm will not continue to be a profitable firm. In fact, there are many firms in the semiconductor industry that have not engaged in the kinds of anticompetitive business practices that Qualcomm has been found to violate, but which are profitable nonetheless.[12] Moreover, these firms also engage in significant R&D activity,[13] including

[12] For example, based on publicly-reported 2018 financial information, Intel achieved a profit margin of approximately 62% on net revenue of $70.8 billion, and Broadcom achieved a profit margin of approximately 52% on net revenue of $20.8 billion. *2018 Intel Corporation Form 10-K*, at 20-21, https://www.sec.gov/Archives/edgar/data/50863/000005086319000007/a12292018q4-10kdocument.htm; *2018 Broadcom Inc. Form 10-K*, at 33, 43, https://www.sec.gov/Archives/edgar/data/1730168/000173016818000084/avgo-11042018x10k.htm. Qualcomm, by comparison, reported a profit margin of 55% on revenue of $22.7 billion. *2018 QUALCOMM Incorporated Form 10-K*, at 41, https://www.sec.gov/Archives/edgar/data/804328/000172894918000095/qcom10-k2018.htm.

[13] In 2018, Intel invested $13.5 billion in R&D (19% of revenue) and Broadcom invested $3.7 billion in R&D (18% of revenue). *2018 Intel Corporation Form 10-K*, at 22;*2018 Broadcom Inc. Form 10-K*, at 43. Qualcomm, by comparison, invested $5.6 billion in R&D (25% of revenue). *2018 QUALCOMM Incorporated Form 10-K*, at 53.

participation in, and leadership of, numerous standards development organizations.[14]

Accordingly, while Qualcomm may be less profitable after complying with the district court's injunction, it may still be a profitable firm, and can, as dictated by competitive pressures in the semiconductor industry, continue to make significant investments in R&D. Thus, the assertion that enforcement of the district court's injunction will lead to a drastic reduction in, or elimination of, Qualcomm's R&D expenditures, appears to be significantly overstated. Qualcomm will still have every incentive to build next generation chips for its customers, and to invest in future products and technologies.

C. Qualcomm's Compliance with the District Court's Injunction Will not Impair its Ability to Supply Products to U.S. Government Agencies

Both the DOD and DOE express concern that the district court's injunction will impair or eliminate Qualcomm's ability to supply 5G mobile chips for use in critical governmental applications such as secure wireless sensors for nuclear control and emergency communications systems, ER316-17 ¶ 10, and military communications channels, ER321-22 ‖ 9. The DOE further explains that "[i]f

[14] By way of example, through 2013, Intel was a member of 100 different SDOs (more than any company other than IBM). Baron & Spulber, *supra*, at 485, tbl. 5. Broadcom was a member of 52 SDOs, and Qualcomm was a member of 53 SDOs. *Id.*

Qualcomm is not able to compete and provide chipsets for those [applications] … foreign entities that may not support supply chain secure solutions may make irreversible gains in the chipset market and 5G standards." ER316 ¶ 9.

Thus, these agencies equate Qualcomm's reduced profits flowing from the district court's injunction with an inability to supply components for critical national infrastructure and security applications. These concerns are misplaced, however, as they are based on an inaccurate understanding of the nature of technical standardization and patents covering standardized technologies.

1. The District Court's Injunction Will Not Eliminate Qualcomm's Ability to Develop, Manufacture and Sell Modem Chips to Government Agencies

The district court's injunction requires Qualcomm, among other things, to grant SEP licenses to rival modem chip suppliers (a practice that Qualcomm engaged in until it realized that licensing only to device manufacturers was "humongously more lucrative," ER1395), and to renegotiate existing license agreements so that royalty levels are not "unreasonably high." ER1391. As an initial matter, these remedial measures, while serious, are not likely to put an end to Qualcomm's ability to design, manufacture and sell chips to governmental and non-governmental customers.

There are many suppliers of critical technologies and components to government agencies that do *not* engage in the kind of anticompetitive practices of

which Qualcomm has been accused. And the failure of these suppliers (i.e., virtually every supplier other than Qualcomm) to engage in such practices does not appear to have hampered their ability to supply the DOE, DOD and other agencies with a wide range of secure and reliable technology products. Thus, it is unclear why the DOD and DOE feel that the cessation of such anticompetitive practices by Qualcomm will materially affect its ongoing ability to supply them with modem chips. Certainly, no evidence to that effect has been adduced in this case.

2. Eliminating the Barriers to Market Entry Previously Imposed by Qualcomm Will Likely Open the Chip Market to More U.S. Competitors

The DOE expresses concern that, if the district court's injunction is enforced, "the unique role played by Qualcomm in the U.S. telecommunications supply chain would not be filled by another U.S. entity." ER316 ¶ 9. If Qualcomm's role in the U.S. telecommunications supply chain today is 'unique', perhaps this is because, as found by the district court, Qualcomm has refused to license to rival modem chip suppliers. ER1395. As the district court noted, Qualcomm's anticompetitive behavior "has promoted rivals' exit from the market, prevented rivals' entry, and delayed or hampered the entry and success of other rivals." ER1280.The district court's injunction requires Qualcomm to make its patented technology available to rival chip makers on FRAND terms, enabling those rivals to "enter modem chip markets without fear of an infringement action."

ER1395. As such, enforcement of the district court's injunction is likely to open chip markets to competitors, thereby *increasing* the number of domestic suppliers of modem chips to the government rather than reducing it.[15]

3. A Hostile Foreign Government Could Not Capture 5G Standardization in a Manner That Would Hobble Qualcomm's Ability to Develop, Manufacture and Sell Chips to Government Agencies

The DOD and DOE also express concern that Chinese companies, particularly Huawei, will fill the void left by Qualcomm's reduced participation in 5G standardization, and "an aggressive, eager China will set standards to accommodate its own wishes." ER323-24 ¶ 14-15. What's more, the DOD fears that "cyber espionage" may result from a more competitive Huawei, "as China's laws require companies to support the national security goals of China's intelligence community." *Id*. ¶ 15.

Notwithstanding the fact that Huawei *already* leads 5G standardization by some measures, *see* Table 1, suppose, for the sake of argument, that Qualcomm's compliance with the district court's injunction were to give Huawei or another foreign SEP holder a further advantage in the area of 5G standardization. If that occurred, the foreign SEP holder would likely develop further technologies for

[15] Initial Determination, *supra* note 10, at *108.

incorporation into 5G standards and acquire additional patents covering those technologies.

But the virtue of international standards is that they are open and publicly accessible, so that Qualcomm and other chip makers would have full access to the information contained in them. Moreover, to the extent that the foreign SEP holder's patents covered portions of 5G standards, the foreign SEP holder would be required to license those SEPs to all applicants, including Qualcomm, on FRAND terms. Thus, Qualcomm, like every other modem chip supplier, would have access to the foreign company's patents on FRAND terms, as today it has access to Huawei's and many other foreign companies' 3G and 4G SEPs. Thus, from the standpoint of patent access, a more influential and competitive Huawei would not diminish the ability of U.S. modem chip suppliers like Qualcomm to manufacture and sell chips conforming to 5G standards.

Even if a foreign SEP holder were pressured by its government to violate its FRAND commitments and refused to license rival chip suppliers (as Qualcomm itself was found by the district court to have done), Qualcomm and other U.S. chip suppliers could still manufacture and sell 5G chips in reliance on the foreign SEP holder's commitment to grant them FRAND licenses. The foreign SEP holder's only recourse would then be to sue those unlicensed chip makers for patent infringement in the countries where they made or sold 5G chips. But the infringing

chip makers, including Qualcomm, would have an airtight defense: the foreign SEP holder remains committed to grant them FRAND licenses under the asserted SEPs.

Thus, it is hard to find a basis for the fears expressed by the DOD and DOE regarding the potential loss of a key supplier of components essential to national security if Qualcomm is required to comply with the district court's injunction.

4. The United States Government and its Contractors Have the Right Under 28 U.S.C. § 1498 to Manufacture and Use any Patented Invention Without the Consent of the Owner for Governmental Purposes

Even if a foreign firm refused to grant a patent license to Qualcomm or other U.S. government chip suppliers, the U.S. government could ensure the continued supply of chips for governmental use under 28 U.S.C. § 1498. This important statutory provision permits the U.S. government and its contractors to manufacture and sell products covered by U.S. patents so long as they are used by or for the federal government. The patent holder's only recourse in such situations is to bring an action in the United States Court of Federal Claims for the recovery of royalties. 28 U.S.C. § 1498(a).

Thus, no matter what action a hostile foreign nation or firm took with respect to patents covering 5G technology (whether or not such patents are SEPs), the U.S. government could authorize Qualcomm and other chip suppliers to continue to manufacture and sell such chips to the government for the national infrastructure and security applications that are of concern. As a result, there is no

reason, from a national security perspective, to excuse Qualcomm from complying with the terms of the district court's injunction.

5. Qualcomm's Compliance with the District Court's Injunction Will Not Increase a Hostile Government's Ability to Incorporate Cyber Espionage or Other Malicious Features into 5G Standards

The DOD worries that the increased influence of Chinese vendors such as Huawei on 5G standardization (filling the void left by a less profitable Qualcomm) would enable the Chinese government to insert malicious features such as "cyber espionage" capabilities into 5G standards. ER323-24 ¶ 15. This fear is unfounded.

International SDOs typically adopt standards on the basis of consensus among the members of the relevant technical committee or working group, and then by the SDO as a whole. Justus Baron et al., *Making the Rules: The Governance of Standard Development Organizations and their Policies on Intellectual Property Rights*, JRC Science for Policy Report EUR 29655 at 107 (Nikolaus Thumm ed., Mar. 2019). In some cases, formal voting or balloting occurs. Yet voting representation is not weighted based on the number of patents held or technical contributions made by a firm. Typically, one member firm, or one participating individual, gets one vote, though in some SDOs such as ISO, voting is by country/national delegation. *Id.* at 93. Thus, due to the careful design of SDO governance procedures, a single firm or country could not influence a standard to

include technical features that were objectionable to a significant number of other SDO participants.

Accordingly, it would not be feasible for Huawei or other Chinese firms to introduce malicious technologies into 5G standards unless a significant number of other, non-Chinese firms supported the inclusion of such technology.[16]

D. Qualcomm is Only One of Several Leading Firms Engaged in 5G Technology and Standards Development

The DOD states, without substantiation, that Qualcomm is "currently the leading United States based company in the development and standard setting for 5G technology." ER319 ¶ 3. It goes on to equate Qualcomm's participation in 5G standards development with U.S. leadership in this area, predicting that "[w]ithout the voice of U.S. industry, other competitor nations could stifle standards that support innovation, competitiveness, and an open ecosystem – in favor of standards which would support the parochial goals of a single state-owned company." ER322-23 ¶ 12.

Likewise the DOE worries that requiring Qualcomm to comply with the district court's injunction might "allow[] foreign-aligned firms to advance and

[16] This is not to say, of course, that foreign firms could not incorporate such malicious technologies into 5G *products*. But products are a different matter than standards. If the U.S. government is concerned with potential malicious code contained within foreign-made products, then it may refrain from purchasing those products, as it has done in the past.

drive the development and intellectual property underpinnings of international 5G standards instead of the U.S." ER316.

Notwithstanding conclusory statements such as these, Qualcomm is not the global leader in 5G standards or technology development, nor does the U.S. lead in this technology sector. According to one study, as of July 2019 the firms declaring the most patents as essential to international 5G standards were the following:

Table 1[17]

Ranking	Firm	Country	5G Declared Patent Families
1	Huawei	China	2,160
2	Nokia/Alcatel	Finland/France	1,516
3	ZTE	China	1,424
4	LG	Korea	1,359
5	Samsung	Korea	1,353
6	Ericsson	Sweden	1,058
7	**Qualcomm**	**U.S.A.**	**921**
8	Sharp	Japan	660
9	Intel	U.S.A.	618

Another analysis, which sought to weigh patent ownership based on the essentiality of patents to 5G standards, produced the following rankings:

[17] Adapted by the author from IPLytics, *Who is leading the 5G patent race? A patent landscape analysis on declared SEPs and standards contributions*, Intell. Asset Mgmt. at 6, tbl. 2 (July 2019), https://www.iam-media.com/who-leading-5g-patent-race-0.

Table 2[18]

Ranking	Firm	Country	5G Patent Declarations with essentiality weighting
1	Ericsson	Sweden	15.8%
2	Samsung	Korea	14.1%
3	**Qualcomm**	**U.S.A.**	**12.6%**
4	Nokia/Alcatel	Finland/France	10.9%
4	Huawei	China	10.9%
6	LG	Korea	8.8%
7	ZTE	China	8.6%
8	Intel	U.S.A.	6.8%
9	Sharp	Japan	5.4%

As both of these tables show, Qualcomm, while a significant participant in 5G technology development and standardization, is only one of many leading firms engaged in this collaborative international activity. If the DOJ, DOD and DOE fear non-U.S. dominance of 5G technology, then their fears have already been realized. Only two U.S. firms (Qualcomm and Intel) appear in the top nine players in this technology sector, as do two Chinese firms, two Korean firms, two European firms and one Japanese firm.

Given the existing international character of 5G standards development, and the fact that a large majority of patents and standards covering emerging 5G technology are already in foreign hands, it is difficult to understand why DOJ,

[18] Adapted by the author from Matthew Noble et al., *Determining which companies are leading the 5G race*, Intellectual Asset Mgmt., July/Aug. 2019, at p. 36, fig. 1.

DOD and DOE believe that enjoining Qualcomm from pursuing anticompetitive business practices will significantly weaken the U.S. position in this technology area. The U.S. does not have a "dominant" position in 5G now, nor is the preservation of Qualcomm's current profitability level likely to give it one.

Thus, if there is a risk that a hostile foreign nation will seek to disadvantage the U.S. through the exertion of control over 5G patents and standards, that risk already exists today, and allowing Qualcomm to continue to engage in anticompetitive activity is not likely to alleviate that risk in the future. But even without the ability to charge monopoly rents, Qualcomm is likely to remain a significant 5G contributor. And if it were to drop a place or two in the list of contributors, such a decline would hardly have a significant effect on national security.

In short, while DOD and DOE might prefer that the U.S. dominate 5G technology and standard-setting, 5G standardization today is truly an international activity dominated by no individual nation. Releasing Qualcomm from the district court's injunction is unlikely to change this reality. And, more importantly, reducing the penalty for anticompetitive conduct solely to bolster a local champion's domestic market and profitability smacks of the sort of "parochial," protectionist behavior that the United States routinely, and justifiably, condemns when it occurs abroad.

CONCLUSION

For the foregoing reasons, the Court should affirm the district court's judgment and injunction.

Dated: November 26, 2019

Respectfully submitted,

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UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

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