

**United States Court of Appeals
for the Federal Circuit**

**TEXAS ADVANCED OPTOELECTRONIC
SOLUTIONS, INC.,**
Plaintiff-Cross-Appellant

v.

**RENESAS ELECTRONICS AMERICA, INC., F/K/A
INTERSIL CORPORATION,**
Defendant-Appellant

2016-2121, 2016-2208, 2016-2235

Appeals from the United States District Court for the
Eastern District of Texas in No. 4:08-cv-00451-RAS,
Judge Richard A. Schell.

Decided: May 1, 2018

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Before DYK, BRYSON, and TARANTO, *Circuit Judges*.

TARANTO, *Circuit Judge*.

Texas Advanced Optoelectronic Solutions, Inc., (TAOS) and Intersil Corporation each develop and sell ambient light sensors, which are used in electronic devices to adjust screen brightness in response to incident light. In the summer of 2004, the parties confidentially shared technical and financial information during negotiations regarding a possible merger. The parties ultimately went their separate ways, but soon after, Intersil released new sensors with the technical design TAOS had disclosed in the confidential negotiations. TAOS then sued Intersil in federal district court for infringement of U.S. Patent No. 6,596,981, as well as for trade secret misappropriation, breach of contract, and tortious interference with prospective business relations under Texas state law. After a trial held in early 2015, a jury returned a verdict for TAOS and awarded damages on all four claims. The court ruled on the parties' post-trial motions and entered final judgment, and both parties appealed.

We now affirm in part, reverse in part, vacate in part, and remand. Among our rulings, we affirm liability for trade secret misappropriation, though on a more limited basis than TAOS presented to the jury, and we affirm liability for infringement of the asserted apparatus claims of the patent at issue. But we vacate the monetary awards, and we remand for further proceedings.

I

A

In the early 2000s, TAOS and Intersil were both developing ambient light sensors for electronic devices. Ambient light sensors use a silicon- or other semiconductor-based photodiode that absorbs light and conducts a

current. The resulting photocurrent is detected by a sensor, and measurements of the current, a function of the ambient light, are used to adjust the brightness of an electronic screen display. One benefit is better visibility—*e.g.*, a brighter screen is more visible in a bright environment; another is improved battery efficiency—*e.g.*, a dimmer screen, sufficient in a dark environment, uses less power. To protect the ambient light sensor within an electronic device, the sensor is typically encased in clear packaging, such as glass or plastic.

A problem with using a silicon-based photodiode is that silicon absorbs not only visible light but also light, such as infrared light, that humans cannot see. If the sensor detects a change in infrared light, it may respond by making a corresponding adjustment in the screen's brightness, even though the adjustment does not improve, and may even impair, the screen's visibility to the human eye. For example, turning on an incandescent lamp, which emits much of its energy in the form of infrared light, would indicate to the sensor a much greater increase in ambient light than the human eye will detect. The screen brightness would then be greatly, rather than only slightly, increased, wasting power and possibly impairing visibility. '981 patent, col. 1, lines 22–29.

One solution to that problem was to place a filter over the sensor (synonymously, detector) to prevent infrared radiation from reaching it. Although effective, those filters add cost. *Id.*, col. 1, lines 37–42.

TAOS conceived another solution, one that does not require using such filters. In 2001 and 2002, TAOS began developing the ambient light sensor TSL2550. The technology used in the TSL2550 is featured in TAOS's '981 patent, applied for in January 2002 and issued in July 2003. TAOS's solution in the TSL2550, and in the '981 patent, was to include in the silicon substrate an array of diodes—some shielded from visible light (shielded diodes),

some exposed to visible light (exposed diodes). *Id.*, col. 3, lines 33–36. In that design, only infrared light produces a photocurrent in the shielded diodes, while infrared and visible light do so in the exposed diodes. *See id.*, col. 2, line 49 through col. 3, line 30. A processor calculates the ratio of the photocurrents in exposed diodes to photocurrents in shielded diodes or vice versa and, based on that information, factors out the infrared light to determine the amount of visible light—which can then be used for screen brightness adjustments. *Id.*, col. 3, lines 24–27.

The '981 patent specification describes an embodiment in which the silicon substrate consists of two wells, one shielded and one exposed, *id.*, col. 1, lines 44–52, where each well is a photodiode, *see id.*, col. 2, lines 56–57 (the well/substrate junction is a diode junction). *See also id.*, col. 6, lines 42–49 (claim 1 covers a substrate with two wells, one shielded and one exposed). The specification also discloses an embodiment in which the photodiode array structure of the silicon substrate is a repeating pattern of shielded and exposed wells in a 3:1 ratio. *See id.*, col. 4, lines 5–8 & Fig. 2. TAOS used the latter embodiment in the TSL2550, released by TAOS in 2002.

In 2003 and 2004, TAOS began developing its second-generation product, the TSL2560. TAOS changed the photodiode array structure from the repeating pattern of shielded and exposed wells in a 3:1 ratio (TSL2550) to a repeating pattern of shielded and exposed wells in a 1:1 ratio (TSL2560). The parties refer to the latter pattern as an “interleaved” or “alternating” array. TAOS found that the interleaved 1:1 ratio design improved light sensitivity.

Meanwhile, Intersil was working on its own ambient light sensors. Its EL7900 used a colored filter over the detector to reflect all infrared light. Intersil also began developing the EL7903, which it later renamed ISL29001. By early February 2004, the design for the EL7903 included a color filter and plastic packaging.

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

5

In February 2004, Intersil approached TAOS to ask for a license to the TSL2550 technology (repeating 3:1 photodiode array). TAOS was not interested in granting such a license, but it was willing to consider a potential merger. On June 3, 2004, TAOS and Intersil executed a Confidentiality Agreement “in order to allow both parties to evaluate the Possible Business Relationship” by disclosing to the other “information relating to our respective businesses and operations (‘Confidential Information’).” J.A. 23828. Under that Agreement, a “Permitted Use” of “Confidential Information” was use “for the limited purpose of enabling the recipient of such information (the ‘Recipient’) to investigate and evaluate the business and financial condition of the other (the ‘Provider’) in connection with such discussions and negotiations.” *Id.* The Agreement included familiar clarifications of what did not constitute “Confidential Information”: information publicly available as of the date of the Agreement; information publicly available after the date of the Agreement, as long as it was not made publicly available by the Recipient in violation of the Agreement; and information that “was known by the Recipient prior to the date of [the Agreement] and such knowledge was documented in the Recipient’s written records prior to such date.” J.A. 23828–29.

TAOS and Intersil engaged in diligence meetings throughout June 2004. During those meetings, TAOS disclosed the technical aspects of the not-yet-released TSL2560 with the 1:1 interleaved diode array structure. TAOS also disclosed that it planned to use glass rather than plastic packaging for its sensors, glass being more expensive but also more reliable and more useful for especially small sensors. And TAOS provided financial information, including information about prices it paid for inputs into its products. Intersil used that financial information to prepare an internal “Build vs. Buy analysis” to decide whether Intersil should build up its own optoelectronics program or instead buy TAOS.

At the end of the June 2004, Intersil offered to buy TAOS. But after a series of offers and counter-offers, the parties failed to come to an agreement. Negotiations ended in August 2004.

On August 31, 2004, Intersil decided to pursue a design of interleaved photodiodes in a 1:1 ratio for the EL7903/ISL29001, a product already in development. In 2005, while Intersil was redesigning the EL7903/ISL29001, TAOS released the TSL2560. In early 2005, TAOS also won a contract from Apple to supply ambient light sensors—specifically, the TSL2561, a derivative of the TSL2560—for use in Apple’s iMac computers. Intersil reverse-engineered the TSL2560 in late January 2006.

Between late 2005 and late 2006, Intersil put its EL7903/ISL29001 and next-generation ISL29003 into the market. In September 2006, Intersil won a contract from Apple to supply the ISL29003 for the Apple iPod, and it began selling its products to Apple in June 2007. Apple later solicited bids for ambient light sensors for use in the iPhone 3G smartphone; by March 2008, Apple selected Intersil’s product. In contrast, TAOS had won the supply contract for ambient light sensors in the original Apple iPhone, before the 3G version, and it won the Apple supply contracts for iPhones after the 3G version.

B

On November 25, 2008, TAOS sued Intersil in the U.S. District Court for the Eastern District of Texas for infringement of the ’981 patent and, under Texas law, for trade secret misappropriation, breach of contract, and tortious interference with contractual relations. TAOS invoked the court’s patent, diversity, and supplemental jurisdiction. *See* 28 U.S.C. §§ 1332, 1338, 1367. Before trial, the court limited patent damages: it granted summary judgment excluding 98.8% of Intersil’s sales of allegedly infringing products on the ground that a jury could not find those sales to be the result of sales or offers

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

7

to sell domestically. *Tex. Advanced Optoelec. Sols., Inc. v. Intersil Corp.*, No. 4:08-cv-451, 2015 WL 13469997, at *4 (E.D. Tex. Feb. 11, 2015) (*SJ Order*). After a trial held in April 2015, a jury returned a verdict for TAOS on all claims and awarded (1) \$73,653.51 as a reasonable royalty for patent infringement; (2) \$48,783,007 in disgorgement of Intersil's profits and \$10 million in exemplary damages for trade secret misappropriation; (3) \$12 million as a reasonable royalty for breach of contract; and (4) \$8 million in lost profits and \$10 million in exemplary damages for tortious interference.¹ The jury also found Intersil's infringement to be willful.

After the trial, TAOS moved for an injunction and enhanced damages for willful patent infringement, and Intersil moved for judgment as a matter of law and for a new trial. The court denied both of TAOS's motions as well as Intersil's motion for a new trial. *Tex. Advanced Optoelec. Sols., Inc. v. Intersil Corp.*, No. 4:08-cv-451, 2016 WL 1659926, at *3, *7–8 (E.D. Tex. Apr. 26, 2016) (*Post-trial Order*) (denying TAOS's motion for enhanced damages and Intersil's motion for a new trial); *Tex. Advanced Optoelec. Sols., Inc. v. Intersil Corp.*, No. 4:08-cv-451, 2016 WL 1615741, at *4–5 (E.D. Tex. Apr. 22, 2016) (*Injunction Order*) (denying TAOS's motion for an injunction). The court also denied Intersil's motion for judgment as a matter of law, except that the court granted Intersil's motion for judgment of no willful infringement as a matter of law. *Post-trial Order*, 2016 WL 1659926, at *9–10.

TAOS filed a motion for entry of final judgment, which the court granted in part and denied in part. *Id.* at *3–6. In response to TAOS's motion, Intersil argued that the jury awards on each claim were duplicative, and that

¹ The jury awarded nominal damages of \$1 for Intersil's retention of documents in breach of the contract. That award is not at issue on appeal.

TAOS should be awarded relief on only one. *See id.* at *4. The court concluded that the damages awarded for breach of contract and for tortious interference were duplicative of the monetary award for trade secret misappropriation. *Id.* at *4. It found no duplication in the patent infringement and trade secret misappropriation awards and allowed both to stand. *Id.* at *5. The court entered final judgment on June 9, 2016.

Both parties appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

Intersil argues that (A) it is not properly liable for trade secret misappropriation; (B) the disgorgement award is excessive; (C) the district court erred in relying on the jury's verdict on disgorgement, which presented an equitable issue for the court to decide and therefore required the court to enter findings of fact and conclusions of law under Fed. R. Civ. P. 52(a)(1); (D) patent infringement was not proved; and (E) the patent infringement damages are duplicative of the trade secret award.

We review de novo the denial of the motion for judgment as a matter of law. *i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 841 (Fed. Cir. 2010) (applying Fifth Circuit law). A motion for judgment as a matter of law "is appropriate only if the court finds that a 'reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue.'" *Id.* (quoting Fed. R. Civ. P. 50(a)(1)). A new trial of limited scope may be a proper form of relief on a motion for judgment as a matter of law. *See* Fed. R. Civ. P. 50(b)(2); *Cone v. W. Va. Pulp & Paper Co.*, 330 U.S. 212 (1947); 9B Arthur R. Miller, *Federal Practice and Procedure* §§ 2538, 2540 (3d ed. Apr. 2018 update).

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

9

A

Intersil argues that we must reverse the jury verdict of liability for trade secret misappropriation. We disagree, although we agree that the verdict cannot properly rest on some of the bases TAOS presented to the jury.

1

In its complaint filed in 2008, TAOS asserted a claim of trade secret misappropriation. Compl. at 23–24, *Tex. Advanced Optoelec. Sols., Inc. v. Intersil Corp.*, No. 4:08-cv-451 (E.D. Tex. Nov. 25, 2008), ECF No. 1. Under the applicable Texas common law, a trade secret is “any formula, pattern, device or compilation of information which is used in one’s business and presents an opportunity to obtain an advantage over competitors who do not know or use it.” *In re Bass*, 113 S.W.3d 735, 739 (Tex. 2003) (citation omitted); *accord Hyde Corp. v. Huffines*, 314 S.W.2d 763, 769 (Tex. 1958) (adopting the definition of a trade secret in the Restatement (First) of Torts § 757 (1939)). “One who discloses or uses another’s trade secrets, without a privilege to do so, is liable to the other if (a) he discovers the secret by improper means, or (b) his disclosure or use constitutes a breach of confidence reposed in him by the other in disclosing the secret to him.” *Hyde*, 314 S.W.2d at 769 (quoting Restatement of Torts § 757).²

At trial, TAOS asserted that Intersil had misappropriated three trade secrets—two financial and one technical: (1) TAOS’s detailed financial information, allegedly used by Intersil in making its “Build vs. Buy” decision;

² The Texas Uniform Trade Secrets Act, which governs claims accruing on or after September 1, 2013, does not apply here. See *Sw. Energy Prod. Co. v. Berry-Helfand*, 491 S.W.3d 699, 711 n.7 (Tex. 2016) (citing Tex. Civ. Prac. & Rem. Code § 134A.001–.008).

(2) the TSL2560 “packaging roadmap” specification of glass packaging despite its cost (higher than for plastic), allegedly used by Intersil in deciding to use plastic packaging, J.A. 23722; *see also* J.A. 19561–63; J.A. 24041; and (3) the 1:1 interleaved photodiode array structure, allegedly used by Intersil in modifying its products (the EL7903/ISL29001). TAOS’s theory of liability was that Intersil’s use of those trade secrets “constitute[d] a breach of confidence reposed in [Intersil] by [TAOS] in disclosing the secret to [Intersil].” *Hyde*, 314 S.W.2d at 769 (quoting Restatement of Torts § 757(b)); *see* Joint Proposed Pretrial Order at 4–5, *Tex. Advanced Optoelec. Sols., Inc. v. Intersil Corp.*, No. 4:08-cv-451 (E.D. Tex. Feb. 18, 2015), ECF No. 501 (TAOS’s contentions that “[a]fter the Confidentiality Agreement was executed, TAOS provided Intersil with its confidential information and trade secrets,” and “Intersil misappropriated TAOS’s trade secrets when [Intersil] . . . utilized TAOS’s trade secrets to revamp the designs for [Intersil’s] first digital ambient light sensor and develop its new line of ambient light sensors”); *see also Hyde*, 314 S.W.2d at 769–70 (example of liability under Restatement § 757(b): Where “A has a trade secret which he wishes to sell with or without his business[,] . . . B is a prospective purchaser[,] . . . [and,] [i]n the course of negotiations, A discloses the secret to B solely for the purpose of enabling him to appraise its value[,] . . . B is under a duty not to disclose the secret or use it adversely to A.” (quoting Restatement § 757 cmt. j)).

2

According to Intersil, there is insufficient evidence to support a jury verdict of trade secret misappropriation based on the glass packaging information and the photodiode array structure, and the “Build vs. Buy” analysis does not, as a matter of law, constitute misappropriation.

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

11

a

At trial TAOS asserted that Intersil misappropriated TAOS's packaging roadmap and cost-breakdown information for the TSL2560 showing the high expense of the glass packaging component. Intersil does not dispute that information of that type can qualify as a trade secret. *See Glob. Water Grp., Inc. v. Atchley*, 244 S.W.3d 924, 928 (Tex. App. 2008) (noting that "device[s]" and "pricing information" may constitute trade secrets); Restatement of Torts § 757 cmt. b (same). Instead, Intersil argues that TAOS failed to show that Intersil acquired this information by misappropriation from TAOS. We agree.

TAOS's technical expert admitted that Intersil was already using low-cost plastic rather than glass packaging in 2003 and early 2004, long before TAOS revealed its cost-breakdown information in June 2004. As shown by written documentation, Intersil also recognized in February 2004 that plastic would provide "low cost packaging" that would "offer a price advantage." J.A. 30499. Intersil did not misappropriate information that it already had. Use of such independently possessed information is no more a misappropriation than is use of one's "independent invention," against which "trade secret law does not offer protection." *Philips v. Frey*, 20 F.3d 623, 629 (5th Cir. 1994) (applying Texas law).³ We therefore conclude that no substantial evidence supports finding misappropriation based on the asserted glass packaging trade secret.

³ The same evidence shows that Intersil's use of plastic packaging is permitted by the Confidentiality Agreement regardless of TAOS's disclosure of its glass packaging roadmap. The Agreement states that "Confidential Information" does not include information that "was known by [Intersil] prior to the date of [the Agreement] and such knowledge was documented in [Intersil's] written records prior to such date." J.A. 23828–29.

b

For the second trade secret, Intersil does not dispute the sufficiency of the evidence regarding the act of misappropriation. Instead, Intersil contends that the photodiode array structure was no longer “secret” in 2004 (the time of the misappropriation) because, it says, the ’981 patent disclosed that structure in 2003. We disagree.

The asserted trade secret is a structure that includes *both* a 1:1 ratio of shielded to unshielded wells *and* interleaving of the wells in that ratio, *i.e.*, repetition of the 1:1 ratio in an alternating pattern (requiring more than one set of wells). The patent discloses, individually, a 1:1 ratio and interleaving of shielded and unshielded wells. *E.g.*, ’981 patent, col. 1, lines 44–51 (1:1 ratio); *id.*, col. 4, lines 4–17 & Fig. 2 (interleaving wells in a 3:1 ratio). But Intersil does not argue—and does not point to any evidence or argument at trial—that the patent discloses the *combination* of those features. Intersil instead treats the two features as if they were the same thing. *See* Intersil Br. 17 (“the alternating (*i.e.*, 1:1) diode structure”); *id.* at 27–28 (describing the patent’s disclosure of a 1:1 ratio); *see also id.* at 7, 15, 16, 23 (referring to the trade secret as the “1:1 ratio”); Reply Br. 1–2 (referring to the “supposedly ‘secret’ 1:1 ratio”); *id.* at 3, 5–8, 10 (similar). Intersil therefore has waived the argument that a reasonable jury could not find that the patent fails to disclose the combination of both features.⁴

⁴ Intersil does not argue on appeal that the unique combination of the interleaved and 1:1 photodiode structure is not a trade secret. *See Sikes v. McGraw-Edison Co.*, 665 F.2d 731, 736 (5th Cir. 1982) (concluding that, under Texas law, a trade secret may be “the application of known techniques and the assembly of available components”; “a trade secret can exist in a combination of char-

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

13

In any event, a reasonable jury could find as much. TAOS Chief Executive Officer Kirk Laney explained that the critical “adjustment[]” made to the earlier product shown in Figure 2 of the patent (the TSL2550 with an interleaved 3:1 ratio design) was making the ratio “1:1, whereas . . . in this diagram [in Figure 2 of the patent], it could be multiple dark [shielded] diodes.” J.A. 19511; *see also id.* (Mr. Laney: “[W]e found that by doing it 1:1, we could get a better, more uniform result as well as increase sensitivity as well.”); J.A. 19561 (Mr. Laney describes how TAOS explained to Intersil during the 2004 negotiations that TAOS “had learned a lot from the 2550 to do a – roughly a 1:1 ratio of the diode structure as they go across the silicon.”); J.A. 19613 (Mr. Laney: “The 2550 had actually three covered diodes between each light diode”); J.A. 20399 (same testimony from ’981 patent named inventor Eugene Dierschke). And TAOS argued to the jury that the combination, not simply the 1:1 ratio, was the misappropriated trade secret. J.A. 22755 (TAOS counsel arguing in closing statement that Intersil’s product “uses the dual-diode approach, interleaved photodiode array, a 1:1 ratio in area, multiple cells”); J.A. 22833 (same in rebuttal).

c

For the third trade secret, TAOS’s theory of liability was that Intersil “misappropriated” TAOS’s detailed financial information by improperly using the information to create a “Build vs. Buy” analysis for itself. Intersil argues that this is an improper basis for liability because

acteristics and components, each of which, by itself, is in the public domain, but the unified process, design and operation of which in unique combination, affords a competitive advantage and is a protectible secret”); *accord Metallurgical Indus. Inc. v. Fourtek, Inc.*, 790 F.2d 1195, 1202 (5th Cir. 1986).

the Confidentiality Agreement clearly permitted that use. We agree.⁵

The Agreement was designed “to allow both parties to evaluate the Possible Business Relationship” by disclosing “information relating to our respective businesses and operations (‘Confidential Information’),” and a “Permitted Use” of Confidential Information was “for the limited purpose of enabling the recipient of such information (the ‘Recipient’) to investigate and evaluate the business and financial condition of the other (the ‘Provider’) in connection with such discussions and negotiations.” J.A. 23828. Intersil properly used TAOS’s financial information in its “Build vs. Buy” analysis “to evaluate the Possible Business Relationship,” *id.*, by analyzing whether to build its own optoelectronics program or to buy TAOS and incorporate TAOS’s program, J.A. 24660. Even TAOS understood the Agreement to allow for that type of analysis, as TAOS used Intersil’s confidential information in the same way to determine whether TAOS should merge or grow. *See* J.A. 42157 (TAOS requested Intersil’s “detailed breakout for percent-of-revenue by function” to “evaluate the business fit” and “weigh[] [the] possibilities of merg[ing] against moving through a rapid growth phase with equity investment to expand our sales, application, and development teams”); TAOS Br. 52 n.4 (stating that TAOS’s grow versus sell “activity was permitted by the Confidentiality Agreement”).

⁵ TAOS argues that Intersil waived that argument. TAOS Br. 51 & n.3. We decline to find waiver. Intersil raised the issue at the Rule 50(a) stage, J.A. 22417–18; moreover, when Intersil raised the issue at the Rule 50(b) stage, TAOS did not make, and thus waived, any argument that Intersil had waived the issue at the 50(a) stage. *See Waganfeald v. Gusman*, 674 F.3d 475, 484 (5th Cir. 2012).

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

15

Although it is undisputed that Intersil used TAOS's information for the "Build vs. Buy" analysis, that use was contractually permitted and therefore not a proper basis of liability for trade secret misappropriation. In this case, where the contract is clear, it "is a question of law for the court" whether the contract permitted Intersil's conduct. *X Techs., Inc. v. Marvin Test Sys., Inc.*, 719 F.3d 406, 413–14 (5th Cir. 2013). As a matter of law, we conclude, the Confidentiality Agreement provided Intersil the "privilege" to use the information in the way Intersil used it, so Intersil's use did not "constitute[] a breach of confidence reposed in [Intersil] by [TAOS] in disclosing the secret to [Intersil]." *Hyde*, 314 S.W.2d at 769 (quoting Restatement of Torts § 757).

At oral argument in this court, TAOS suggested that Intersil's act of misappropriation was not use of the secret information for its "Build vs. Buy" analysis, but use of that information to "design, build, market, and sell ambient light sensors rather than using it for the purposes of determining whether to purchase us." Oral Argument at 38:23–34. But that theory of use of detailed financial information in the actual building of products was not TAOS's theory of liability at trial, which instead was directly about the "Build vs. Buy" analysis. TAOS was clear about its trial position in its closing argument:

They got the [secret] information, and they conducted a build versus buy analysis. It's all over the documents. It's all over the testimony. . . . They conduct . . . a build versus buy analysis related to the products . . . and they were working to better understand the design and packaging/the secret sauce. That's what they were using to conduct the build versus buy analysis.

J.A. 22735–36. TAOS confirmed the point in rebuttal:

[Intersil's witness] admitted that [Intersil] breached this contract, that they used the confi-

dential information for their purposes, to do their build versus buy or make versus build analysis. That is not a permitted use under that agreement.

J.A. 22830; *see also* J.A. 19452 (TAOS opening statement: “The Permitted Use provision says that you will use this information for one thing and one thing only, and that is evaluating whether or not [Intersil] wanted to buy TAOS. [Intersil] couldn’t use the information for purposes of evaluating whether or not [Intersil] wanted to build [its] own competing ambient light sensor product line, and the evidence will show that’s exactly what [Intersil] did.”).

And the point is highlighted by the contrast TAOS itself made with its two other misappropriation theories—that Intersil misappropriated TAOS’s glass-packaging financial trade secret and photodiode structure technical trade secret by using those secrets “to actually create a competing line of digital [ambient light sensors] (in addition to the Build vs. Buy analysis).” TAOS Br. 51; *see* J.A. 22829 (closing argument). The jury instruction, not challenged on appeal, made this distinction clearly:

Specifically, the plaintiff claims that the defendant misappropriated the plaintiff’s trade secrets when the defendant, number one, *used the plaintiff’s trade secrets to conduct a build versus buy analysis to determine whether the defendant should design and build the defendant’s competing ambient light sensors instead of acquiring the plaintiff* and[, number two,] utilized the plaintiff’s trade secrets to revamp the designs for its first digital ambient light sensor and develop its new line of ambient light sensors to compete with the plaintiff in the ambient light sensor market.

J.A. 22663–64 (emphasis added).

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

17

Accordingly, liability for trade secret misappropriation cannot properly rest on the “Build vs. Buy” theory advanced by TAOS.

3

Intersil has persuasively shown that the misappropriation verdict cannot properly rest on two of TAOS’s theories—the theory that Intersil’s packaging choice was the result of misappropriated information, and the theory that Intersil misused the financial information for a Build vs. Buy analysis. Nevertheless, Intersil has not shown that the liability verdict should be set aside. Intersil does not specifically contend that the submission of the first (glass packaging) theory to the jury now requires vacating the liability verdict. And though Intersil does make such a contention based on the submission of the second (Build vs. Buy) theory to the jury, we find vacatur on that ground unjustified even if we assume (without deciding) that Intersil is correct in viewing the second theory as not merely unsupported by sufficient evidence but as “legally” erroneous.

The general rule is that “if a jury could find liability according to multiple theories, and one of them is [legally] erroneous, we reverse unless we can tell that the jury came to its decision using only correct legal theories. If it is impossible to tell whether a correct theory has been used, we reverse for a new trial.” *Rodriguez v. Riddell Sports, Inc.*, 242 F.3d 567, 577 (5th Cir. 2001) (citations omitted); see *McCaig v. Wells Fargo Bank (Tex.), N.A.*, 788 F.3d 463, 476 (5th Cir. 2015). But the verdict will stand if the legal error is harmless. See *Skilling v. United States*, 561 U.S. 358, 414 & n.46 (2010); *Hedgpeth v. Pulido*, 555 U.S. 57, 60–61 (2008) (per curiam); *United States v. Skilling*, 638 F.3d 480, 481–82 (5th Cir. 2011). An error is harmless if it did not affect Intersil’s “substantial rights.” 28 U.S.C. § 2111; Fed. R. Civ. P. 61; see also *Shinseki v. Sanders*, 556 U.S. 396, 407–08 (2009). Harmless-error

review is a flexible one in which we “determin[e] whether [the] error is harmless through the . . . case-specific application of judgment, based upon examination of the record.” *Shinseki*, 556 U.S. at 407. Unless prejudice is clear even without any explanation, “the party seeking reversal normally must explain why the erroneous ruling caused harm.” *Id.* at 410.

Here, we conclude that the error regarding the Build v. Buy theory was harmless. Intersil concedes that “[t]he verdict[] . . . was *based largely on* the asserted secrecy of ‘the diode structure that [TAOS] patented.’” Intersil Br. 30–31 (emphasis added; fourth alteration in original). That assertion cuts strongly in favor of a harmless-error conclusion, and the assertion is amply supported by the evidence. TAOS has pointed to overwhelming evidence that Intersil learned of TAOS’s design during the due diligence and changed its design soon after the negotiations fell through. For instance, Xijian Lin, Intersil’s lead engineer on the EL7903/ISL29001, confirmed that, before the EL7903, he had never designed a structure with interleaved shielded and exposed diodes. J.A. 20486. Brian North, the design engineer working on Intersil’s EL7903, admitted that he learned of TAOS’s design during the due diligence. J.A. 21502–03; *see also* J.A. 20428–29 (TAOS inventor Dierschke testified that during the negotiations TAOS showed Intersil the change from a 3:1 interleaved array in the TSL2550 to a 1:1 interleaved array in the TSL2560). And documents show that Intersil changed the structure of the EL7903 to incorporate the 1:1 interleaved diode array structure *after* the end of the due diligence meetings in August 2004. *Compare* J.A. 30499 (EL7903 product specification dated February 11, 2004, with no mention of 1:1 interleaved array structure), *with* J.A. 24635 (email dated Sept. 1, 2004, summarizing a meeting the day before when stating: “A new PD [photodetector] layout (different from EL7900) will be used. It has the the [*sic*] light current

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

19

cells interleaving the dark current cells.”). Both parties’ experts testified that there was no evidence of Intersil’s independent design of that structure. J.A. 20867; J.A. 21961. Intersil has not provided any explanation as to why the error at issue is harmful in light of this evidence.

In these circumstances, we affirm the verdict of Intersil’s liability for trade secret misappropriation, limited to Intersil’s use of the photodiode array structure.

B

Intersil challenges the amount of the monetary award for trade secret misappropriation on several grounds, including that the absence of liability on at least the “Build vs. Buy” trade secret requires vacatur of the award and that the award encompassed damages attributable to sales that occurred long after the 1:1 interleaved photodiode array structure was no longer a trade secret.⁶ We agree as to both and vacate the award.⁷

1

The monetary award for trade secret misappropriation must be vacated because we have determined that misappropriation liability here can properly rest on only

⁶ TAOS argues that Intersil waived the second challenge by not raising it in a Rule 50(a) motion. TAOS is wrong—Intersil raised the issue in its Rule 50(a) motion. J.A. 22382.

⁷ Because we vacate the award on those grounds, we need not address Intersil’s other challenges to the amount of the award on the issues of gross versus net profits and proper apportionment to the trade secret used in devices containing other features. If similar issues arise on remand, the district court should consider the issues at that time.

one of the three grounds that TAOS presented to the jury. TAOS's calculation of monetary relief did not distinguish among those grounds. TAOS's expert testified that the "trade secrets [were] the – the drivers of sales." J.A. 21137–38. But he did not explain which of the trade secrets contributed to what amount of profit to be disgorged; he assigned all profits to the misappropriation of all trade secrets. On this record, we have no basis to conclude that the remaining ground for liability—the photodiode structure trade secret—supports the entire award. This is one reason for vacating the award.

2

There is a second, independent reason. As to the loss of trade secret status, the unrebutted evidence at trial showed that TAOS's 1:1 interleaved photodiode array was accessible to Intersil by proper means long before the time of many of the sales included in TAOS's request for monetary relief. Such accessibility existed no later than January 2006, when Intersil successfully reverse-engineered the TSL2560, and perhaps as early as February 2005, when TAOS "released" the TSL2560.⁸ We need not pinpoint the date to know that it predated many of the sales included in the calculation of monetary relief put before the jury by TAOS's expert.

Accessibility by proper means rendered the photodiode array structure no longer a protected secret. *See E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1015 (5th Cir. 1970) ("[T]he Texas rule is clear" that "[o]ne may use his competitor's secret process if he discovers the process by reverse engineering applied to the

⁸ It is not clear from the record (1) exactly when, in early 2005, the TSL2560 was released and (2) whether that release included a disclosure of the specific photodiode array structure.

finished product.”). Secrecy protection terminated at the end of the period of time it would have taken Intersil, after Intersil’s permissible discovery of the photodiode structure, to recreate that structure in its own products. *See Research Equip. Co. v. C. H. Galloway & Sci. Cages, Inc.*, 485 S.W.2d 953, 956 (Tex. Civ. App. 1972) (explaining that “the trial court was called upon to determine that period of time which would have been required for one having no background in the cage manufacturing business to launch such an enterprise”); *see also Injunction Order*, 2016 WL 1615741, at *3 (in denying TAOS’s motion for an injunction based on the misappropriation, the trial court acknowledged that “[w]hatever potential ‘head start’ [Intersil] may have gained from its misappropriation of [TAOS]’s trade secrets occurred years ago and has no bearing on any future harm”).

TAOS contends that, under Texas law, the period of liability extends indefinitely, at least for purposes of monetary relief. But the cited authority, *K & G Oil Tool & Serv. Co. v. G & G Fishing Tool Serv.*, 314 S.W.2d 782 (Tex. 1958), says no such thing. *See* Oral Arg. 22:20–23:30 (arguing that *K & G Oil* holds that trade secret misappropriation is a single tort that occurs at the time of the misappropriation, but admitting that *K & G Oil* does not speak to “the damage side”). In fact, *K & G Oil*, 314 S.W.2d at 790, refers to the Texas Supreme Court’s opinion in *Hyde*, 314 S.W.2d at 769, decided the same day, where the court concluded that a defendant liable for trade secret misappropriation was not entitled to dissolution of an injunction *immediately* upon publication of the trade secret in a patent application, because such dissolution would give the defendant a “head start” on the competition. *Hyde*, 314 S.W.2d at 777–78. That limited head-start period, which “depend[s] upon the facts of each particular case,” *id.* at 778, ends TAOS’s entitlement to monetary relief.

Here, the jury awarded disgorgement of profits in the exact amount TAOS's expert proposed, based on sales from April 2006 through March 2014. More than 90% of that award was attributable to sales that occurred between January 2008 and March 2014. TAOS's evidence supporting its claim to monetary relief for trade secret misappropriation did not limit the covered sales to a head-start period, and that omission cannot be deemed harmless. The jury awarded what TAOS sought, and given the timing of the sales on which the relief sought was based, the absence of any limitation to a head-start period might have had large consequences. A head-start period of less than two years, which Intersil has suggested, would seem to require exclusion of the lion's share of the sales covered by the award on appeal. Oral Argument at 7:05–17 (Intersil counsel representing that the head-start period would be 22 months); *see* J.A. 19455 (TAOS, in its opening statement to the jury, asserting a similar head-start period).

For those reasons, we vacate the jury's monetary award for misappropriation of trade secrets. On remand, any determination of sales-based monetary relief for trade secret misappropriation requires evidence and a determination of the time at which the trade secret became properly accessible to Intersil and the duration of any head-start period.

3

The parties do not dispute that, if the disgorgement award is vacated, the same disposition is appropriate for the jury's award of exemplary damages. We therefore vacate that award.

C

Intersil challenges the judgment on disgorgement for an additional reason. It agrees that the question of liability for trade secret misappropriation in this case was

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

23

properly tried to the jury. It contends, however, that the district court erred in “rely[ing] on the jury’s verdict on disgorgement” as a remedy for that wrong, and therefore that vacatur of the disgorgement award is necessary. *Post-trial Order*, 2016 WL 1659926, at *9. According to Intersil, monetary relief in the form of disgorgement is equitable and, as a result, the court, not the jury, must decide whether to award it and how much to award. Therefore, Intersil argues, the district court had to treat the jury verdict on disgorgement as merely advisory, *see* Fed. R. Civ. P. 39(a), (c), and had to “find the facts specially and state its conclusions of law separately” on disgorgement, Fed. R. Civ. P. 52(a)(1). The district court did not do so.

We already are vacating the judgment awarding disgorgement relief on other grounds. But we are remanding for a new trial on this relief (if it continues to be requested on remand), and so it is significant whether the jury or the court is to decide whether to award disgorgement and, if so, what amount to award. We therefore address Intersil’s argument.

TAOS does not dispute Intersil’s premise that Intersil had a right to a non-jury decision on disgorgement unless TAOS had a Seventh Amendment right to a jury decision on disgorgement. We therefore proceed on that premise. The parties debate whether TAOS has a Seventh Amendment right to a jury decision on its request for disgorgement of Intersil’s profits. We conclude that TAOS does not have such a right, and we therefore vacate the disgorgement award on this ground as well. Intersil is entitled to a decision on disgorgement by the trial court, with findings of fact and conclusions of law duly entered in accordance with Rule 52.

1

The Seventh Amendment to the U.S. Constitution, ratified in 1791, provides that, “[i]n Suits at common law,

where the value in controversy shall exceed twenty dollars, the right of a trial by jury shall be preserved.” The right of trial by jury “is the right which existed under the English common law when the Amendment was adopted.” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 376 (1996) (quoting *Balt. & Carolina Line, Inc. v. Redman*, 295 U.S. 654, 657 (1935)). In this case, which focuses on the remedy of disgorgement for a wrong (trade secret misappropriation) that undisputedly had to be adjudicated by a jury, it suffices for us to answer a history-focused question: did the law courts award the defendant’s profits as a remedy for this kind of wrong? No controlling Fifth Circuit precedent having been identified to us, we proceed directly to Supreme Court authorities to answer the question.

This question may be asked, without material difference for present purposes, in either of two ways. The Supreme Court has said that a party has a right to a jury trial of a particular “action” if such an action, or a sufficient analogue, could have been brought in the English courts of law in 1791. *Chauffeurs, Teamsters & Helpers, Local No. 391 v. Terry*, 494 U.S. 558, 564–66 (1990); see also *Parsons v. Bedford, Breedlove & Robeson*, 28 U.S. (3 Pet.) 433, 447 (1830). The answer to that question depends on a historical examination of the “action” asserted, considering “the nature of the issues involved,” and the remedy sought, with emphasis on the latter. *Terry*, 494 U.S. at 565; accord *Wooddell v. Int’l Bhd. of Elec. Workers, Local 71*, 502 U.S. 93, 97 (1991); *Tull v. United States*, 481 U.S. 412, 417–18 (1987). The Supreme Court has also said that it first asks if the “cause of action” was tried at law in 1791 or is “analogous to one that was,” and then asks if the particular “trial decision”—such as the “remedy” determination after finding “liability”—must be decided by the jury in order to preserve the jury-trial right on the cause of action as it existed in 1791. *City of Monterey v. Del Monte Dunes at Monterey, Ltd.*, 526 U.S.

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

25

687, 708–09 (1999); accord *Markman*, 517 U.S. at 376; see, e.g., *Tull*, 481 U.S. at 425–26. History plays a strong role in the latter inquiry. *Markman*, 517 U.S. at 378. If the historical inquiry under either framing does not yield an answer, the court considers “precedent and functional considerations.” *City of Monterey*, 526 U.S. at 718–19; see *Markman*, 517 U.S. at 384, 388. In this case, however, TAOS does not dispute that it lacks a right to a jury decision on the remedy it seeks if that remedy was not historically available at law; it does not rely on functional considerations to support its argument for a right to a jury determination of disgorgement.

Intersil uses the first framing. It views TAOS as having distinct misappropriation “claims”—one a damages claim, the other a disgorgement claim—and argues that the disgorgement “claim” was not brought in the law courts in 1791, so no right to a jury trial attaches to that “claim.” (In that view, the underlying liability issues had to be decided by the jury under *Beacon Theatres, Inc. v. Westover*, 359 U.S. 500, 508–10 (1959), because among TAOS’s requests for relief was the undisputedly legal remedy of a reasonable royalty.) Intersil’s contention may also be evaluated, however, by accepting that there was a cause of action for misappropriation to be decided by the jury, and asking whether the particular remedy of disgorgement was available in the law courts in 1791 for that cause of action. We see no difference in those two approaches for purposes of this case: under either framing, if disgorgement of the defendant’s profits was not available at law for the kind of wrong at issue here, TAOS has no constitutional right to a jury to decide the disgorgement question.

2

In some cases, a plaintiff seeking disgorgement as a remedy for trade secret misappropriation might prove that this measure of relief, though focused on the defend-

ant's gains, is good evidence of damages in the form of the plaintiff's losses or of a reasonable royalty for use of the secret. But this is not such a case. In the trial court here, TAOS sought disgorgement of Intersil's profits as such, not based on any evidence or argument that such profits soundly measured, and hence were a case-specific proxy for, TAOS's losses or a reasonable royalty.

First, nothing in the jury instructions required that, to award Intersil's profits, the jury had to find that those profits were related in any way to either TAOS's lost profits or a reasonable royalty. *See* J.A. 79; J.A. 22668. By the time the case went to trial, TAOS had dropped its claim for lost profits. Accordingly, the jury instruction and verdict form presented the jury with only disgorgement of Intersil's profits and a reasonable royalty as options for monetary relief, distinguishing them. J.A. 79; J.A. 113; J.A. 22668.

Second, TAOS's expert, when presenting its evidence of appropriate monetary relief, gave very different figures at trial for monetary relief for disgorgement and for a reasonable royalty. *Compare* J.A. 21057 (\$48,763,000 for disgorgement), *with* J.A. 21061 (\$17.2 million as a reasonable royalty), *and* J.A. 21077–78 (same). Before trial, when lost profits were still under consideration, he supplied very different figures for the three forms of relief—disgorgement, a reasonable royalty, and lost profits. J.A. 6198. Moreover, he made a point at trial of distinguishing Intersil's profits from TAOS's lost profits, the latter sought for claims other than trade secret misappropriation. J.A. 21055–56.

Third, TAOS itself characterized its disgorgement request as one for all of Intersil's profits, without qualification as to that figure's relationship to any other measure. Its proposed jury instruction stated: "If you find that Intersil misappropriated one or more of TAOS'[s] trade secrets, you may award TAOS *up to all of Intersil's profits*

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

27

gained as a result of that misappropriation under the ‘disgorgement’ remedy.” Joint Proposed Jury Instructions and Verdict Form at 75 (emphasis added). That instruction continued: “The purpose of the disgorgement remedy is to compensate TAOS for Intersil’s conduct, and the remedy is available regardless of whether actual damages are proven.” *Id.*

Fourth, TAOS cites no evidence for its assertion on appeal that, “[b]ecause Intersil’s *profits* from misappropriating TAOS’[s] trade secrets correlated with TAOS’[s] *losses*, the disgorgement remedy was a proxy for damages properly determined by a jury.” TAOS Br. 61. The absence of evidence is even more significant in light of our holding that the misappropriation liability is restricted to Intersil’s use of the photodiode array trade secret. For example, TAOS says that, after TAOS won the first iPhone contract, “Intersil kicked TAOS out of the Apple iPhone” by winning the contract for the second-generation iPhone (iPhone 3G). TAOS Br. 28; *accord* J.A. 19455 (TAOS opening statement). But TAOS has not identified evidence showing that it would have won the contract had Intersil not used TAOS’s photodiode array structure. TAOS itself attributed Intersil’s iPhone 3G win primarily to Intersil’s significantly lower bid price, made possible by using the (lower cost) plastic packaging. *See* J.A. 19455–56 (TAOS opening statement: Intersil “kicked [TAOS] out” of the iPhone 3G contract with a lower bid price by using plastic packaging); J.A. 20135–36 (similar testimony of TAOS CEO Mr. Laney); J.A. 20140–42 (Mr. Laney testifies that TAOS regained Apple’s business after adopting similar plastic packaging and reducing price); *see also* Feb. 12, 2015 Trial Tr. at 72, 74, *Tex. Advanced Optoelec. Sols., Inc. v. Intersil Corp.*, No. 4:08-cv-451 (E.D. Tex. June 1, 2016), ECF No. 582 (Intersil opening statement: Intersil also attributes that win to lower bid price).

For those reasons, we conclude that in this case there is no basis for viewing the requested disgorgement of all

of the defendant's profits as a "proxy" for actual damages in the form of lost profits or a reasonable royalty. To be sure, monetary relief in the form of disgorgement, like other monetary relief, has been labeled a form of "compensation" where awarded to a wronged plaintiff for an injury. See *Kokesh v. SEC*, 137 S. Ct. 1635, 1644 (2017) (distinguishing disgorgement award to injured private plaintiff from disgorgement as penalty sought by government enforcer); *Mowry v. Whitney*, 81 U.S. (14 Wall.) 620, 653 (1871) (using "compensation" label for infringer's profits in deciding whether interest was allowed). But that description does not answer the Seventh Amendment question about availability of disgorgement in the law courts in 1791, even if disgorgement is characterized at a general level (to quote the jury instruction here) as "compensat[ing] the Plaintiff for the harm that was proximately caused by the Defendant as a result of the misappropriation of the Plaintiff's trade secrets." J.A. 79. The question in this case is whether disgorgement of the defendant's profits, considered on its own terms, without proof that it was a sound measure of the plaintiff's harm, was available at law in 1791 for this sort of wrong.

3

TAOS has not shown that such disgorgement was available. And there are strong reasons to think that it was not.

Disgorgement of a defendant's gains is often called "restitution." See, e.g., *Kokesh*, 137 S. Ct. at 1640; *Great-West Life & Annuity Ins. Co. v. Knudson*, 534 U.S. 204, 215 (2002); *Harris Tr. & Sav. Bank v. Salomon Smith Barney Inc.*, 530 U.S. 238, 250 (2000). The Supreme Court has made clear that, "[i]n the days of the divided bench, restitution was available in certain cases at law, and in certain others in equity." *Great-West Life*, 534 U.S. at 212 (citing sources).

Thus, “restitution is a legal remedy when ordered in a case at law and an equitable remedy . . . when ordered in an equity case,” and whether it is legal or equitable depends on “the basis for [the plaintiff’s] claim” and the nature of the underlying remedies sought.

Id. at 213 (alterations in original) (quoting *Reich v. Cont’l Cas. Co.*, 33 F.3d 754, 756 (7th Cir. 1994) (Posner, J.)); see *Sereboff v. Mid Atl. Med. Servs., Inc.*, 547 U.S. 356, 362–66 (2006) (repeating this standard; finding non-restitutionary lien by agreement to be equitable).

Examples are informative. Restitution could be obtained in equity when the underlying cause of action was equitable (e.g., a claim of breach of a trustee’s fiduciary duties) or when a party sought a specific equitable remedy, such as a constructive trust or lien or (in some circumstances) accounting for profits. See *Great-West Life*, 534 U.S. at 213–16 & n.2; *Sereboff*, 547 U.S. at 363–68. The Court has referred to disgorgement as equitable in various circumstances, often as ancillary to a request for an injunction.⁹ On the other hand, in some circumstances, a

⁹ *E.g.*, *Porter v. Warner Holding Co.*, 328 U.S. 395, 398–99 (1946) (“restitution of illegal rents” in compliance with “a decree compelling one to disgorge . . . rents . . . may be considered as an equitable adjunct to an injunction decree”); *Sheldon v. Metro-Goldwyn Pictures Corp.*, 309 U.S. 390, 399 (1940) (“recovery of profits . . . had been allowed in equity both in copyright and patent cases as appropriate equitable relief incident to a decree for an injunction”); *Hamilton-Brown Shoe Co. v. Wolf Bros. & Co.*, 240 U.S. 251, 259 (1916) (explaining, in a trademark case, that if equity jurisdiction rests on another basis, such as “the right to an injunction,” the equity court, “for the purpose of administering complete relief,” may award “profits . . . as an equitable measure of compensation”); see

“plaintiff had a right to restitution *at law* through an action derived from the common-law writ of *assumpsit*.” *Great-West Life*, 534 U.S. at 213.

Here, “the basis for [TAOS’s] claim,” *id.*, is trade secret misappropriation. Claims for that wrong were first recognized in the American and English equity (or chancery) courts in the nineteenth century. See 1 Melvin F. Jager, *Trade Secrets Law* § 2:2 (Oct. 2017 update) (first trade secret case in England was reported in 1817, *Newbery v. James*, 35 Eng. Rep. 1011 (Ch. 1817), in which an injunction was denied; such English cases “were routinely cited as authority for the first series of U.S. [trade secret] cases, in the late 1800’s and early 1900’s”); Restatement (Third) of Unfair Competition § 39 cmt. a (1995); *e.g.*, *Peabody v. Norfolk*, 98 Mass. 452, 458 (1868) (recognizing trade secret protection by equity courts); *Bryson v. Whitehead*, 57 Eng. Rep. 29, 31 (1822) (same); see also *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 493 (1974) (“Trade secret law and patent law have co-existed in this country for over one hundred years”); Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 Cal. L. Rev. 241, 252–53 & n.58 (1998) (*Peabody* was one of the first trade secret cases in the United States);

also *Petrella v. Metro-Goldwyn-Mayer, Inc.*, 134 S. Ct. 1962, 1978 (2014) (discussed *infra*; characterizing disgorgement of profits for copyright infringement in that case as equitable); *Great-West Life*, 534 U.S. at 218 n.4 (discussing *Curtis v. Loether*, 415 U.S. 189 (1974), and *Terry*, 494 U.S. 558); *Tull*, 481 U.S. at 424 (distinguishing disgorgement and monetary restitution awarded as an adjunct to injunctive relief from a civil penalty; finding jury-trial right for decision on liability under a civil penalty provision, though judge could decide amount of penalty).

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

31

Developments in the Law: Competitive Torts, 77 Harv. L. Rev. 888, 948 (1964) (same).

Once claims of trade secret misappropriation came to be accepted in the Nineteenth Century, several decisions quickly recognized that a plaintiff properly asserting jurisdiction in equity could also request incidental monetary relief in the form of disgorgement (restitution) of the defendant's profits based on the defendant's past use of the trade secret. *E.g.*, *Green v. Folgham*, 57 Eng. Rep. 159, 162–63 (Ch. 1823) (defendant undisputedly considered as holding trade secret in trust under the settlement was decreed to account for profits, which would be awarded to plaintiffs; the case was then referred to the courts of law, where a jury would decide the value of the trade secret to award further monetary relief to plaintiffs); *see Vickery v. Welch*, 36 Mass. 523, 527 (1837) (in a debt action on a bond brought in court of law, recognizing a trade secret as property, deciding that the bond had been forfeited, and stating that the plaintiff “may be heard in chancery [equity] touching the damages”); *see also* Restatement (First) of Restitution § 136 cmt. a (1937) (“The usual method of seeking restitution is by a bill in equity, with a request for an accounting for any profits which have been received.”). In contrast, we have been pointed to no sound basis for concluding that, for this wrong, the law courts would have awarded disgorgement of the defendant's profits, notwithstanding that the law courts, through a writ of assumpsit, sometimes awarded such relief for certain other wrongs.

We also consider appropriate analogues from 1791 in the Seventh Amendment historical inquiry. *See Markman*, 517 U.S. at 378; *Terry*, 494 U.S. at 565–66. As a general matter, a tort plaintiff could bring a quasi-contract action in the law courts, through a writ of assumpsit, and seek monetary restitution. 1 Dan B. Dobbs, *Law of Remedies* § 4.1(3), at 565 (2d ed. 1993); *see also id.* § 4.3(2), at 590; Frederic C. Woodward, *The Law of Quasi*

Contracts § 271, at 439 (1913) (“[T]here is in reality an election between alternative obligations resulting from the commission of a tort—an obligation to pay such damages as the plaintiff has suffered, and an obligation to pay for such benefits as the defendant has received . . .”); Arthur L. Corbin, *Waiver of Tort and Suit in Assumpsit*, 19 Yale L.J. 221, 225–27, 239–40, 244 (1910) (similar); William A. Keener, *Treatise on the Law of Quasi-Contracts* 159–63 (1893) (similar); see generally Woodward, *Quasi Contracts* §§ 270–74, at 437–42. But trade secret misappropriation is a particular kind of tort—for improper use of intellectual property—and for that kind of tort, the legal quasi-contract restitutionary remedy does not appear to have included awarding disgorgement of the defendant’s profits, which is what is sought here.

Consider patent infringement. Congress never authorized quasi-contract (legal) actions based on patent infringement. See 7 Donald S. Chisum, *Chisum on Patents* § 20.02 (2011). Originally, damages were authorized through traditional actions on the case. See *Root v. Lake Shore & M.S. Ry. Co.*, 105 U.S. 189, 191 (1881); Woodward, *Quasi Contracts* § 288, at 461. No legal action for disgorgement of profits was recognized. See *Coupe v. Royer*, 155 U.S. 565, 582 (1895); *Tilghman v. Proctor*, 125 U.S. 137, 143–46 (1888). That remained true when a reasonable royalty came to be recognized as an available remedy, starting in the second half of the Nineteenth Century, and then definitively in *Dowagiac Manufacturing Co. v. Minnesota Moline Plow Co.*, 235 U.S. 641, 648 (1915), and a subsequent statute, Pub. L. No. 67-147, § 8, 42 Stat. 389, 392 (1922). Not long before Congress abolished disgorgement of defendant’s profits as a patent remedy, see *Aro Mfg. Co. v. Convertible Top Replacement Co., Inc.*, 377 U.S. 476, 504–05 (1964) (describing 1946 amendment), the Supreme Court observed that “recovery of profits . . . had been allowed *in equity* both in copyright and patent cases as appropriate equitable relief incident

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

33

to a decree for an injunction,” *Sheldon v. Metro-Goldwyn Pictures Corp.*, 309 U.S. 390, 399 (1940) (emphasis added); see *Hamilton-Brown Shoe Co. v. Wolf Bros. & Co.*, 240 U.S. 251, 259 (1916) (trademark case following patent cases, *Root* and *Tilghman*, to recognize that equity could award disgorgement of profits where equity jurisdiction otherwise attached, typically because the plaintiff had a right to an injunction).

Certain scholars furnished an explanation for the law courts’ not providing disgorgement of the defendant’s profits for patent infringement, even though patent infringement sounded in tort, see *Schillinger v. United States*, 155 U.S. 163, 169 (1894), and restitution through a writ of assumpsit was broadly available for torts, including for the improper taking or use of intangible property, based on a theory of a contract implied in law (quasi-contract), see Woodward, *Quasi Contracts* §§ 270–75, at 437–42; Corbin, *Waiver of Tort and Suit in Assumpsit*, 19 Yale L.J. at 231; Keener, *Quasi-Contracts* 159–60, 163–65; see also 2 Dobbs, *Remedies* § 6.2(4), at 41 & n.1. Citing the facts that another’s use of a patent-protected idea does not prevent a patent owner from also using the invention and that all the infringer has taken at the owner’s expense is the owner’s right to exclude the infringer, these scholars reasoned that “the true measure of recovery” in restitution in an action in assumpsit based on patent infringement would not be “the profits actually reaped by the infringer, as in the case of a suit in equity for an injunction and accounting, but the value of the use of the invention—ordinarily determined by reference to the royalty or price paid for such use by licensees.” Woodward, *Quasi Contracts* § 288, at 461; see also Keener, *Quasi-Contracts* 165–66. On that rationale, they said, the assumpsit measure of relief for this tort was limited to a reasonable royalty. See Woodward, *Quasi Contracts* § 288, at 461; Keener, *Quasi-Contracts* 166 (“The plaintiff in a case of this sort should recover such a sum as the jury

would have been authorized to give, had there been a contract between the plaintiff and the defendant that the latter should pay the reasonable value of the user.”); *see also* Corbin, *Waiver of Tort and Suit in Assumpsit*, 19 Yale L.J. at 244–45 (plaintiff suing in assumpsit is entitled to recover the amount of what would have been gained under the implied contract, not “the full amount of the defendant’s unholy enrichment”).

The apparent fact is that for patent infringement, disgorgement of profits was not historically available at law. As for copyright and trademark infringement, we have seen no support for concluding that disgorgement of profits was available at law for those wrongs.¹⁰ And recently, in *Petrella v. Metro-Goldwyn-Mayer, Inc.*, 134 S. Ct. 1962 (2014), the Supreme Court treated recovery of the defendants’ profits in a copyright infringement case as an equitable remedy. It stated:

Like other restitutional remedies, recovery of [defendants’] profits “is not easily characterized as legal or equitable,” for it is an “amalgamation of

¹⁰ *See Feltner*, 523 U.S. at 350–52 (early copyright actions brought in the courts of law were tried before juries in the form of actions on the case and actions of debt); *Hamilton-Brown Shoe*, 240 U.S. at 259 (trademark case describing availability of disgorgement in equity); Mark A. Thurmon, *Ending the Seventh Amendment Confusion: A Critical Analysis of the Right to a Jury Trial in Trademark Cases*, 11 Tex. Intell. Prop. L.J. 1, 57–63 & n.315 (2002) (noting only two reported trademark actions brought at law between 1584 and 1783—one in an action on the case for deceit and the other in an action for fraud); *see also Tandy Corp. v. Malone & Hyde, Inc.*, 769 F.2d 362, 364 (6th Cir. 1985) (noting that most early trademark cases in England and America were brought in equity, as an injunction was the preferred remedy).

rights and remedies drawn from both systems.” Restatement (Third) of Restitution and Unjust Enrichment § 4, Comment *b*, p. 28 (2010). Given the “protean character” of the profits-recovery remedy, see *id.*, Comment *c*, at 30, we regard as appropriate its treatment as “equitable” in this case.

Id. at 1967 n.1; see also *id.* at 1978 (characterizing as “equitable relief” the “disgorgement of unjust gains and an injunction against future infringement” sought by the plaintiff in that case). While not faced with the Seventh Amendment question, the Court recognized the equitable nature of disgorgement for a particular tort involving intellectual property.¹¹

We see no basis for drawing a different conclusion for TAOS’s request for disgorgement for trade secret misappropriation in this case, based on Intersil’s improper taking and use of TAOS’s intellectual property in the photodiode structure. For Seventh Amendment purposes, claims for patent, copyright, or trademark infringement are appropriate analogues of the trade secret claim here. From all we have seen, no disgorgement remedy was available at law in 1791 for the former claims. We conclude that no such remedy would have been available at law for the trade secret misappropriation here, either.

¹¹ More than a decade earlier, in another case involving copyright infringement, the Court referred to “awards of actual damages and profits, see [17 U.S.C.] § 504(b), which are generally thought to constitute legal relief.” *Feltner*, 523 U.S. at 346. But, in the references cited for support, the Court provided explanatory parentheticals related to only “damages,” not “profits.” *Id.* The Court also carefully used the word “generally” when noting how such remedies may be understood. *Id.*

TAOS relies on *Dairy Queen, Inc. v. Wood*, 369 U.S. 469 (1962), to support its claim of a jury-trial right on disgorgement. But that decision does not support its claim here. *Dairy Queen* contains no discussion of a request for disgorgement of the defendant's profits or, indeed, any mention of "restitution," "defendant's "profits," "unjust gains," or "unjust enrichment." *Id.* at 469–80. It does refer to the plaintiffs' request for an "accounting," and explains that, though the term was generally employed to identify a procedure used in equity, the request in *Dairy Queen* was in fact a claim for familiar legal "damages" for breach of contract or trademark infringement or both. *Id.* at 476–77; *see also id.* at 477 n.13 ("Whatever else the complaint sought, it did seek a judgment for some \$60,000 allegedly owing under the contract."); Resp.'s Br., *Dairy Queen, Inc. v. Wood*, 1962 WL 115789, at *6 (U.S. Jan. 5, 1962) (arguing (unsuccessfully) that the complaint asked only for an accounting, and not for a certain sum of \$60,000 owed under the contract).

The Fifth Circuit came to a similar conclusion in like circumstances in *Swofford v. B & W, Inc.*, 336 F.2d 406 (5th Cir. 1964), a patent infringement case where "it [was] clear that the plaintiffs ha[d] requested damages" despite the plaintiffs' terminological choice to ask for an "accounting for profits, damages." *Id.* at 409–10; *see also id.* at 410 (noting that "counsel for the plaintiffs emphasized the damage request and offered to amend the complaint by substituting 'damages' for 'accounting' if the court thought there is 'magic' in the term, 'accounting.>"). The Fifth Circuit did go on to state that equity courts in patent infringement cases that awarded defendant's profits via an accounting were in fact providing damages. *Id.* at 411. But the Fifth Circuit did not hold that disgorgement of the defendant's profits was available at law in 1791. *See id.* Nor did that court's reasoning apply to any cognizable

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

37

claim for disgorgement, because the Supreme Court, a month earlier, had ruled that defendants' profits were not available under the Patent Act. *Aro Mfg.*, 377 U.S. at 504–05.

We conclude, therefore, that TAOS has no right to a jury decision on its request for disgorgement of Intersil's profits as a remedy for trade secret misappropriation.

D

Regarding patent infringement, Intersil argues that there is insufficient evidence to support the jury's verdict of direct infringement of dependent claims 16, 17, 18, 43, 45, and 46 of the '981 patent. Claims 16, 17, and 18 depend on independent claim 1, which reads:

1. A monolithic optical detector comprising:

a first well in a substrate, said first well configured to be exposed to incident light and for generating a first photocurrent as a function of the incident light;

a second well in the substrate, proximate said first well, said second well configured to be shielded from the incident light and for generating a second photocurrent as a function of the incident light; and

means, responsive to the first and second photocurrents, for determining an indication of spectral content of the incident light.

'981 patent, col. 6, lines 42–52. Claims 43, 45, and 46 directly or indirectly depend on independent claim 28, which is the method claim counterpart to claim 1, and which reads:

28. A method for determining spectral content of incident light upon a monolithic optical detector comprising:

generating a first photocurrent as a function of the incident light at a first well in a substrate, the first well configured to be exposed to incident light;

generating a second photocurrent as a function of the incident light at a second well in the substrate proximate the first well, the second well configured to be shielded from the incident light; and

determining an indication of spectral content of the incident light in response to the first and second photocurrents.

Id., col. 8, lines 46–57. Dependent claims 16, 17, 18, 43, 45, and 46 contain limitations regarding additional features of the optical detector in claims 1 and 28, such as an analog-to-digital converter. *E.g.*, *id.*, col. 7, lines 51–57 (claim 16). The issues on appeal concern only certain limitations in the two independent claims, which are incorporated in each of the respective dependent claims.

TAOS’s theory of infringement at trial was that Intersil’s products infringe the method claims (*i.e.*, claims 43, 45, and 46) by operating in “Mode 3.” In Mode 3, according to TAOS, the products “determin[e] an indication of spectral content of the incident light in response to the first and second photocurrents.” In Intersil’s products, the default mode of the chip is noninfringing Mode 1. An off-chip microcontroller is used to activate Mode 3 to collect information from the shielded and exposed diodes, and perform subtraction to roughly estimate the amount of visible light. *See* Feb. 25, 2015 Trial Tr. at 83–84, 91–94, *Tex. Advanced Optoelec. Sols., Inc. v. Intersil Corp.*, No. 4:08-cv-451 (E.D. Tex. June 1, 2016), ECF No. 588 (testimony of Intersil employee: Mode 1 collects data from diode 1, Mode 2 collects data from diode 2; Mode 1 is the default; and the off-chip microcontroller may select Mode 3); *see also* Feb. 19, 2015 Trial Tr. at 12–14, *Tex.*

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

39

Advanced Optoelec. Sols., Inc. v. Intersil Corp., No. 4:08-cv-451 (E.D. Tex. June 1, 2016), ECF No. 587 (cross-examination testimony of TAOS infringement expert). There was no evidence presented at trial that any of Intersil's products in fact operate in Mode 3. TAOS's infringement expert testified that Apple did not use Intersil's products in Mode 3 and agreed that he had not observed and was not aware of "Mode 3 being implemented in any commercial product." J.A. 20965. And while TAOS points to trial testimony and exhibits regarding "testing" of the products (by Intersil and/or Apple), the cited evidence does not show that such testing included operation in Mode 3.

Intersil argues that because there is no evidence of the accused products operating in Mode 3, the only alleged infringing mode, there is no evidence of any use of Intersil's products that directly infringes the method claims. See *Mirror Worlds, LLC v. Apple Inc.*, 692 F.3d 1351, 1359 (Fed. Cir. 2012) (direct infringement of a method claim requires that each step of the method be performed). We agree, and therefore reverse the verdict of infringement of method claims 43, 45, and 46.

The same reasoning does not apply to apparatus claims 16, 17, and 18. As TAOS points out, those claims require only devices that are *capable* of "determining an indication of spectral content of the incident light in response to the first and second photocurrents"—*i.e.*, that they include, as part of the monolithic optical detector, "means, responsive to the first and second photocurrents, for determining an indication of spectral content of the incident light," '981 patent, col. 6, lines 50–52. Although infringement of the apparatus claims requires that Intersil's products have the ability to perform in Mode 3, infringement does not require actual use of Intersil's products in Mode 3. See *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1216–17 (Fed. Cir. 2014).

Intersil makes no argument in response that those apparatus claims require more than capability. Instead, Intersil argues that a separate claim element is missing from its products: it contends that the structure of the “means, responsive to the first and second photocurrents, for determining an indication of spectral content of the incident light” is not located on the chip in Intersil’s products, while the claim requirement of a “monolithic optical detector” requires that it be on the chip. *See Tex. Advanced Optoelec. Sols., Inc. v. Intersil Corp.*, No. 4:08-cv-451, 2013 WL 10996554, at *6 (E.D. Tex. June 10, 2013) (construing “monolithic optical detector” as “an optical detector formed on or in a single semiconductor substrate”). According to Intersil, its off-chip microcontroller must be used to switch from default Mode 1 to infringing Mode 3, and that microcontroller activity should be considered part of the “means, responsive to the first and second photocurrents, for determining an indication of spectral content of the incident light.”

The jury could find otherwise. TAOS’s expert testified that “Mode 3 is done on [the] chip,” J.A. 20848, and that the structure for Mode 3 is present on the chip, J.A. 20996. Intersil, for its part, did not present an affirmative contrary theory to the jury. Intersil’s infringement expert agreed that the first two limitations of claim 1 (the shielded and exposed wells) are on the chip, J.A. 21769, but he did not testify about the microcontroller’s role regarding the last limitation (“means . . . for determining”). *See* J.A. 21722–23, 21770–73 (expert’s distinct noninfringement theory that the equations performed in Mode 3 on the chip do not qualify as a “means . . . for determining”). In light of the testimony presented at trial, a reasonable jury could have found that the microcontroller’s simple “activation” of Mode 3—switching from default Mode 1 to Mode 3—was not part of the “means . . . for determining.” We affirm the judgment of infringement of claims 16, 17, and 18.

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

41

E

Intersil argues that the district court erred in concluding that the award for patent infringement is not duplicative of the award for trade secret misappropriation. We agree with Intersil.

“[D]ouble recovery for the same injury is inappropriate.” *Aero Prods. Int’l, Inc. v. Intex Recreation Corp.*, 466 F.3d 1000, 1017 (Fed. Cir. 2006). Here, Intersil’s use of TAOS’s photodiode array structure is the basis of Intersil’s liability for both trade secret misappropriation and patent infringement. The award for patent infringement was based on a subset of the sales that form the basis of the award for trade secret misappropriation: patent infringement damages were based on sales of the ISL29001, ISL29002, ISL29003, and ISL29004; the trade secret misappropriation award was based on sales of those four products and more than a dozen others. The patent award represents an impermissible double recovery. *See id.* at 1019 (impermissible double recovery where “all of the damages awarded to [plaintiff] flowed from the same operative facts: sales of the [same] infringing [products]”).

The double recovery is clear from the TAOS expert’s calculations. TAOS’s expert calculated a disgorgement award for the trade secret misappropriation in which *all* profits made from sales of the infringing products (plus all profits made from sales of additional products) would go to TAOS. The expert calculated a reasonable royalty for the patent infringement based on a fraction of the total profits for those infringing products. The jury chose to award the full amount (\$48,783,007) of the expert’s proposed disgorgement award for the trade secret misappropriation and a partial amount (\$73,653.51) of the expert’s proposed royalty for the patent infringement (\$105,219).

The royalty award for patent infringement was therefore duplicative of some portion of the disgorgement

award for trade secret misappropriation, to the extent the awards cover the same period. The jury's disgorgement award for trade secret misappropriation covered the period from April 2006 through March 2014. TAOS's expert's proposed royalty calculation for patent infringement covered a subset of that period, namely, January 2007 through March 2014. Thus, although the jury awarded only a portion of the proposed patent royalty, the patent award on appeal covers sales (in fact, only sales) that are already part of the disgorgement award. Such overlap is improper. *See id.* at 1018–19 (concluding that patent infringement damages and trademark infringement disgorgement were duplicative for sales of the same products).

We vacate the award of damages for patent infringement and remand for further proceedings as appropriate. Any damages award for patent infringement must be limited to infringement of claims 16, 17, and 18.

III

In its cross-appeal, TAOS makes three arguments: (1) the district court erred in granting summary judgment in favor of Intersil as to extraterritorial sales; (2) the court erroneously denied TAOS an injunction barring Intersil's infringement of the '981 patent; and (3) the court erred in denying TAOS enhanced damages based on Intersil's willful infringement. We affirm the district court as to the first cross-appeal issue. We vacate as to the second and third.

A

We review *de novo* the district court's grant of Intersil's motion for summary judgment as to damages from extraterritorial sales. *See Profectus Tech. LLC v. Huawei Techs. Co., Ltd.*, 823 F.3d 1375, 1379 (Fed. Cir. 2016) (applying Fifth Circuit law); *Triple Tee Golf, Inc. v. Nike, Inc.*, 485 F.3d 253, 261 (5th Cir. 2007).

Under 35 U.S.C. § 271(a), “whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.” Section 284 then provides, in pertinent part, that “[u]pon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement.” Under those statutes, Intersil moved for summary judgment against TAOS receiving damages for 98.8% of Intersil’s sales of the products accused of infringement. Intersil submitted evidence that, except for 1.2% of the accused units, all of its accused products were manufactured, packaged, and tested abroad, and those units were shipped to manufacturers and distributors abroad.

TAOS did not dispute those facts. Instead, TAOS focused on providing evidence that Intersil had sold or offered to sell the patented invention to Apple within the United States. *See SJ Order*, 2015 WL 13469997, at *2–3. TAOS presented evidence of domestic purchase orders of silicon wafers (possible components of the accused products, but not the accused products themselves), *id.* at *2; evidence that Intersil and Apple are both United States corporations with their principal places of business in the United States, and that Apple sold the iPhone 3G in the United States, which included the accused products, *id.*; an unsigned Intersil template purchase order identifying no particular parties or products, *id.*; internal Intersil emails and other documents referring to “Apple Contract C347” but not specifying the terms of any such contract or whether the contract has been executed, *id.*; an email stating that Intersil will ship products to Apple pursuant to an order placed by Apple, without specifying where the order was executed or where the Intersil products will ship from or to, *id.* at *3; a document concerning business with Apple and containing unexplained charts and graphs and unexplained references to contracts and

products, *id.*; another series of unexplained charts, *id.*; and emails between Intersil and Apple regarding pricing negotiations and Apple's testing of Intersil products, without specifying locations of such negotiations and testing, *id.* The district court properly determined that none of that evidence sufficed to allow a reasonable finding that Intersil sold or offered to sell the accused products within the United States, except for 1.2% of the accused units, for which there was additional evidence of domestic sale. *Id.* at *4.

TAOS renews its argument on appeal, but it now relies, in large part, on trial testimony and trial exhibits, rather than the exhibits submitted at the summary judgment stage. Compare TAOS Br. 29–31 (citing primarily to joint appendix cites at numbers over 20000, corresponding to trial evidence), and TAOS Reply Br. 10–11 (same), with J.A. 14498–15702 (TAOS exhibits submitted in response to Intersil's motion for summary judgment); see also TAOS Br. 89 (argument focuses on trial evidence). Such evidence, which was not before the district court on summary judgment, is not a proper ground for disturbing the summary judgment ruling. See *Meyer Intellectual Props. Ltd. v. Bodum, Inc.*, 690 F.3d 1354, 1371 (Fed. Cir. 2012) (A party “cannot for the first time on appeal introduce deposition testimony that was not before the district court when it was deciding the motions for summary judgment.”).

As for the evidence that may properly be considered, that evidence—of domestic negotiations and testing of some of Intersil's products—does not demonstrate “substantial activities regarding sales” sufficient to raise a material dispute of fact as to sales or offers to sell in the United States. TAOS Reply Br. 10.¹² In *Halo Electronics*,

¹² An offer to sell in the United States must be an offer to make a sale that will occur in the United States; it

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

45

Inc. v. Pulse Electronics, Inc., this court affirmed a grant of summary judgment that the defendant Pulse did not sell or offer to sell within the United States under § 271(a) in light of evidence similar to that presented here by TAOS. 769 F.3d 1371, 1377–81 (Fed. Cir. 2014), *rev'd on other grounds*, 136 S. Ct. 1923 (2016). In *Halo*, manufacturing and delivery of the accused products were outside the United States, *id.* at 1379; Pulse's domestic pricing negotiations with third-party Cisco, conducted on a quarterly basis and directed to specific products, did not "constitute a firm agreement to buy and sell, binding on both Cisco and Pulse," *id.*; those parties had a "general business agreement" that "did not refer to, and was not a contract to sell, any specific product," *id.*; and the plaintiff Halo presented no evidence of the location of formation of relevant binding contracts to sell, *id.* at 1379 n.1. Under those undisputed facts, this court affirmed the district court's conclusion on summary judgment that there was no sale or offer to sell in the United States. *Id.* at 1381.

TAOS has presented an even weaker case than Halo presented. Here, the undisputed facts show manufacture, packaging, and testing abroad, and shipping of the units to locations abroad. And TAOS has not presented any evidence similar to *Halo's* "general business agreement" and quarterly pricing negotiations as to specific products.

TAOS points to *Carnegie Mellon University v. Marvell Technology Group, Ltd.*, 807 F.3d 1283, 1309 (Fed. Cir. 2015), in which this court agreed with the district court in declining to rule as a matter of law in favor of the defendant Marvell that the sales occurred abroad. But in *Carnegie Mellon*, "there was some evidence suggesting

is not enough that the offer is made in the United States. See *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Contractors USA, Inc.*, 617 F.3d 1296, 1309 (Fed. Cir. 2010).

that specific contractual commitments for specific volumes of chips [accused products] were made in the United States.” *Id.* TAOS presented no such specific evidence to the district court here. In addition, in *Carnegie Mellon, Marvell* “had the opportunity to present evidence at trial that the sales took place only abroad and simply failed to do so.” *Id.* The court repeatedly stressed that “record” in concluding that judgment as a matter of law in favor of Marvell was not warranted. *Id.* at 1309 (“We cannot conclude otherwise on the record here”; “On this record, we cannot say that a jury could not find the chips to have been sold in the United States”); *id.* at 1310 (“On this record, . . . Marvell is not entitled to JMOL”). Here, the evidentiary record is quite different. Intersil presented evidence of extraterritorial manufacturing, packaging, testing, and shipping, and TAOS failed to present any evidence establishing the required domestic activity. On this record, TAOS has not produced evidence sufficient to raise a material dispute of fact as to the 98.8% of units that were the subject of the district court’s grant of summary judgment.

B

We review for abuse of discretion the district court’s denial of TAOS’s motion for an injunction to prevent future patent infringement by Intersil. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006). TAOS challenges the district court’s findings supporting the denial of the motion for an injunction. It also requests that we enter an injunction in its favor.

To obtain a permanent injunction, TAOS, having succeeded on the merits of its patent-infringement claim, had to show (1) irreparable injury in the absence of an injunction, (2) inadequacy of compensatory remedies at law, (3) a balance of hardships favoring an injunction, and (4) consistency of an injunction with the public interest. *Id.* The district court denied TAOS’s request for an

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

47

injunction upon finding that, because TAOS had requested a reasonable royalty as compensation for past infringement, a reasonable royalty should be adequate to compensate TAOS for future infringement. *Injunction Order*, 2016 WL 1615741, at *4. On that ground alone, the court found that TAOS had not shown irreparable harm (the first *eBay* element, closely related to the second).

That analysis is insufficient even for the irreparable harm and inadequacy of compensation elements of *eBay*. A patent owner's request for relief in the form of a reasonable royalty may be relevant to those inquiries, but it is not conclusive without further analysis. Irreparable harm, not adequately compensable at law, may exist even if there is evidence that, for example, the patent owner is "willing[] to license its patent" and does not commercially practice its patent. *eBay*, 547 U.S. at 393. A patentee may find a royalty to be the most appropriate remedy for past infringement: it may best measure those harms which are reliably measurable. That does not mean, however, that there do not exist the kinds of hard-to-measure harms, such as impaired goodwill and competitive position, that can justify injunctions to prevent them before they occur (precisely because they are hard to quantify later). *See iAi Ltd. P'ship*, 598 F.3d at 862 (affirming permanent injunction and finding of inadequate remedies at law, as "loss of market share, brand recognition, and customer goodwill . . . may frequently defy attempts at valuation, particularly when the infringing acts significantly change the relevant market"); *see also, e.g., Acumed LLC v. Stryker Corp.*, 551 F.3d 1323, 1329 (Fed. Cir. 2008) (affirming permanent injunction, even where patent owner had granted licenses to other entities, because "[a]dding a new [direct] competitor to the market may create an irreparable harm that the prior licenses did not"). In this court, the two parties allege various case-specific facts as supporting or disproving irreparable

harm: *e.g.*, TAOS says that this is a two-player market; Intersil points to TAOS's success in winning Apple business in recent years. TAOS Br. 83–85; Intersil Reply Br. 47–50; *see also Injunction Order*, 2016 WL 1615741, at *4 (stating that, if plaintiff had not requested a reasonable royalty for past harm, “the court might have determined that [Intersil’s] continued sale of an Infringing Product amounted to irreparable injury”). But the district court did not make findings about such specifics.

Nothing the district court said about the other *eBay* elements cures the absence of a full discussion of irreparable harm and inadequacy of compensation at law. Regarding the balance of hardships, the court said only that “without establishing irreparable harm, [TAOS] cannot demonstrate that it will be faced with a hardship if an injunction does not issue.” *Injunction Order*, 2016 WL 1615741, at *5. That observation is hardly independent of the deficient irreparable-harm analysis. And the court did not find that an injunction would so harm the public interest that it should be denied even if irreparable harm were present. Indeed, it said only that the public interest factor “weighs against the issuance of an injunction” because TAOS did not address how to prevent the injunction from adversely affecting the public interest. *Id.*

In these circumstances, we vacate the denial of an injunction and remand for further consideration of the request, while expressing no opinion on the outcome. We will not grant TAOS's request that we order an injunction to be issued. It suffices in this case to say that “[t]he decision to grant or deny permanent injunctive relief is an act of equitable discretion by the district court,” *eBay*, 547 U.S. at 391, and we are not in a position to make the necessary factual findings.

C

The parties do not dispute that, if the jury verdict finding liability for patent infringement survives, the

TEXAS ADVANCED OPTOELECTRONIC v. RENESAS
ELECTRONICS AMERICA

49

district court's ruling denying enhanced damages under the standard set forth in *In re Seagate Technology, LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007), must be vacated in light of the intervening decision in *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 136 S. Ct. 1923 (2016), abrogating *In re Seagate. Post-trial Order*, 2016 WL 1659926, at *6–8. Because we affirm the verdict of patent infringement as to the apparatus claims, we vacate the district court's denial of TAOS's motion for enhanced damages based on the jury's finding of willful infringement.

IV

For the foregoing reasons, we affirm the judgment of liability for trade secret misappropriation of the photodiode array structure; reverse the verdict of infringement of claims 43, 45, and 46 of the '981 patent; affirm the verdict of infringement of claims 16, 17, and 18 of the '981 patent and the judgment of infringement; and vacate the awards for trade secret misappropriation and patent infringement, including the award of exemplary damages for trade secret misappropriation. We also affirm the summary judgment excluding 98.8% of TAOS's proposed damages for patent infringement, vacate the denial of TAOS's motion for an injunction barring Intersil's sale of infringing products, and vacate the denial of TAOS's motion for enhanced damages. We remand for further proceedings.

This case involves two other causes of action for which the jury found Intersil liable and awarded damages—namely, breach of contract and tortious interference. TAOS has requested that, in the event the judgment is vacated or modified on appeal, we “remand to the district court for a determination of whether judgment should be entered on the breach of contract and tortious interference claims.” TAOS Br. at 91 n.12. We think it sufficient, in light of our vacatur of the disgorgement award for trade secret misappropriation, to vacate the district

court's determination that the damages for breach of contract and tortious interference are duplicative of that disgorgement award. *Post-trial Order*, 2016 WL 1659926, at *3–4. We leave to the district court on remand the resolution of all issues, both substantive and procedural, that bear on the proper treatment of the jury verdicts on breach of contract and tortious interference.

Each party shall bear its own costs.

**AFFIRMED IN PART, REVERSED IN PART,
VACATED IN PART, AND REMANDED**