

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

OMEGA PATENTS, LLC,
Plaintiff-Appellee

v.

CALAMP CORP.,
Defendant-Appellant

2018-1309

Appeal from the United States District Court for the
Middle District of Florida in No. 6:13-cv-01950-PGB-DCI,
Judge Paul G. Byron.

Decided: April 8, 2019

BRIAN R. GILCHRIST, Allen, Dyer, Doppelt & Gilchrist,
PA, Orlando, FL, argued for plaintiff-appellee. Also repre-
sented by RYAN SANTURRI.

CONSTANTINE L. TRELA, JR., Sidley Austin LLP, Chi-
cago, IL, argued for defendant-appellant. Also represented
by STEPHANIE P. KOH, BRYAN C. MULDER, THOMAS D. REIN.

Before PROST, *Chief Judge*, DYK and WALLACH, *Circuit
Judges.*

DYK, *Circuit Judge*.

CalAmp Corp. appeals from a judgment that U.S. Patent Nos. 6,346,876 ('876 patent), 6,756,885 ('885 patent), 7,671,727 ('727 patent), and 8,032,278 ('278 patent) were infringed and are not invalid. We affirm the judgment of no invalidity, affirm-in-part, reverse-in-part, vacate-in-part, and remand the judgment as to direct infringement. We vacate and remand for a new trial on indirect infringement, compensatory damages, willful infringement, enhanced damages, and attorney's fees.

BACKGROUND

This case involves a patent infringement suit brought by Omega Patents, LLC ("Omega") against CalAmp for infringement of claims 1, 3, 4, 5, 12, 14, and 16 of the '876 patent, claims 1, 2, 3, 12, and 14 of the '885 patent, claims 1, 10, and 11 of the '727 patent, and claims 1, 2, 3, 4, 5, 6, 8, 11, 12, 13, 14, 16, 18, 19, and 21 of the '278 patent. Representative claims are set forth in the addendum.

The patents generally relate to multi-vehicle compatible systems that can remotely control various vehicle functions (for example, remote vehicle starting), *see, e.g.*, '876 patent, col. 3, ll. 34–36; '885 patent, col. 3, ll. 33–35, and read the status of various vehicle devices (for example, battery health), *see, e.g.*, '278 patent, col. 18, ll. 56–57. The systems can also be used to notify the driver, or the driver's employer, if certain conditions occur (for example, speeding). *See, e.g.*, '727 patent, col. 2, ll. 41–45; '278 patent, col. 9, ll. 26–33. In order to be compatible with different vehicles, the controller must determine the appropriate protocol to use in communicating with a particular vehicle data bus (an internal communications network), which is connected to various devices in the vehicle. This process involves the controller's first sending out a series of signals using different protocols to the vehicle's data bus, which relays them to the vehicle's devices. If the vehicle device recognizes one of the signals, it can then respond with its

own signal, which travels to the data bus and then back to the controller. The controller relies on this response to determine the appropriate protocol to use for further communication with the vehicle devices. *See, e.g.*, '885 patent, col. 4, ll. 9–23; col. 9, ll. 21–55.

CalAmp operates in the telematics industry, assisting businesses and government entities monitor and collect data for their assets (for example, a fleet of vehicles). CalAmp sells its Location Messaging Unit (“LMU”) products, which are multi-vehicle compatible devices that include a GPS receiver for vehicle tracking. The LMU connects to a vehicle’s data communication bus via the on-board diagnostics port and can retrieve information (for example, battery health or vehicle speed) from the vehicle’s engine control unit (“ECU”) via the vehicle’s data bus. Further, the LMU can relay information to CalAmp’s servers (for example, in the form of a speeding notification), which enables businesses to remotely monitor various aspects of their vehicles.

Omega filed suit against CalAmp in the Middle District of Florida on December 20, 2013, for patent infringement based on CalAmp’s LMU systems and related products.¹ After a trial, a jury found all asserted claims to be not invalid and infringed, and the jury also found that CalAmp willfully “infringed a valid patent.” J.A. 170. The jury awarded Omega approximately \$2.98 million in compensatory damages. The district court trebled damages for willful infringement, awarded attorney’s fees to Omega, awarded damages for sales made subsequent to the jury

¹ The products at issue are the LMU-3000, LMU-3030, and LMU-3050. CalAmp also sells its VPOD products that allow other CalAmp devices to connect to a vehicle’s data bus. VPOD and VPOD2 were also at issue before the jury. The parties do not differentiate between the various products on appeal, so neither do we.

verdict, and added pre-judgment interest. The award totaled approximately \$15 million with an on-going royalty rate of \$12.76 per unit. The district court declined to award a permanent injunction, a determination that is not at issue in this appeal.

CalAmp appealed the final judgment and we have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

I. Invalidity

CalAmp argues that the district court's claim construction of the terms "transmitter," "receiver," and "data communication bus / vehicle data communications bus / vehicle data bus" were erroneous. Some or all of the terminology appears in each of the various claims of the asserted patents. There is no argument that these constructions had any effect on the jury's findings of infringement. Rather, CalAmp contends that these constructions affected the jury's verdict of invalidity, though there is no claim that these constructions affected invalidity with respect to prior art introduced at trial. The contention is that had the district court adopted CalAmp's proposed constructions, "CalAmp's invalidity defenses would have included additional prior art references." CalAmp, Open. Br. at 17.

"Federal Rule [of Civil Procedure] 46 requires that a party, at the time the ruling or order of the trial judge is . . . sought, make known to the court the action that he desires the court to take . . . and the grounds therefor," otherwise a claim of error is typically forfeited. 9B Charles A. Wright & Arthur R. Miller, *Federal Practice and Procedure* § 2472 (3d ed. 2018) ("Wright & Miller"). "This requirement is not a mere technical formality and is essential to the orderly administration of civil justice." *Id.* At the same time, courts have recognized that the requirement of securing a ruling is "not to be applied in a ritualistic fashion." Wright & Miller § 2472. Context may well reveal an implicit ruling that

will suffice to preserve the issue. CalAmp informed the district court during *Markman* that construction of the terms “transmitter,” “receiver,” and “data bus” were actually in dispute because additional prior art for CalAmp’s invalidity defense may or may not be relevant depending on the court’s construction.

Here CalAmp did nothing in the district court *Markman* proceeding to specifically identify the prior art that would be impacted by the claim construction ruling. At the *Markman* hearing, there was no identification of any specific prior art references that would be excluded by the district court’s claim construction ruling.² Instead, the court was presented with only vague claims that there was prior art before August 22, 1995, one year before the earliest priority date of the asserted patents, that would be relevant under CalAmp’s proposed construction. To be sure, CalAmp was not required to identify the prior art at the *Markman* proceeding in order to preserve the argument, but here CalAmp fails to argue the prior art was identified at any time thereafter.

In its opening brief on appeal, CalAmp argued its “invalidity defenses would have included additional prior art references showing such wired connections.” But in its opening brief CalAmp failed to present a developed argument as to why any actions by the district court after the *Markman* hearing had the effect of excluding or limiting prior art that CalAmp offered to present or even what relevant prior art was excluded by the claim construction ruling. Under these circumstances, CalAmp has failed to properly preserve the issue. *See Becton Dickinson & Co. v.*

² The closest CalAmp came is a statement during the *Markman* hearing relating “to a reference that was cited in Omega’s brief,” J.A. 18644, but there appears to be no specific prior art cited there either, Omega’s Opposition to CalAmp’s Motion for Claim Construction, ECF No. 40.

C.R. Bard, Inc., 922 F.2d 792, 800 (Fed. Cir. 1990) (“[A]n issue not raised by an appellant in its opening brief . . . is waived.”).

We decline CalAmp’s invitation to speculate as to how additional prior art may have been rendered irrelevant under the court’s claim construction. Thus, although CalAmp’s challenge to the district court’s claim construction was preserved under Federal Rule of Civil Procedure 51 for purposes of challenging the jury instructions, *Lighting Ballast Control LLC v. Phillips Elecs. N. Am. Corp.*, 790 F.3d 1329, 1338 (Fed. Cir. 2015), we conclude that CalAmp failed to satisfy the requirements of Federal Rule of Civil Procedure 46 by not seeking admission into evidence of, or at least specifically identifying, the additional prior art. Such a request and specific ruling by the district court is particularly necessary where the prior art concerns a defense of obviousness because a prior art reference need not satisfy every claim element to still be relevant to obviousness.

For these reasons, we affirm the judgment as to the validity of the asserted patent claims.

II. Infringement

We next consider the district court’s order denying CalAmp’s motion for judgment as a matter of law (“JMOL”) or a new trial based on various infringement issues. We review the denial of JMOL de novo, viewing the evidence in the light most favorable to the non-moving party.

“Where the district court’s claim construction relies only on intrinsic evidence, as is the case here, the construction is a legal determination reviewed de novo.” *In re: Copaxone Consol. Cases*, 906 F.3d 1013, 1022 (Fed. Cir. 2018). When the district court errs in its jury instructions as to the construction of a term central to the infringement dispute, “[t]he error requires at least vacatur of the verdict and a remand for a new trial unless we can conclude that

the error was not prejudicial, *i.e.*, was harmless.” *Avid Tech., Inc. v. Harmonic, Inc.*, 812 F.3d 1040, 1047 (Fed. Cir. 2016). “[T]he error in the instruction governing this central dispute at trial would be harmless only if a reasonable juror would have been required by the evidence to find [i]nfringement even without the error.” *Id.* The jury’s determination of infringement is reviewed for substantial evidence.

A. Infringement of ’727 Patent Claim 11

CalAmp argues that there was insufficient evidence for the jury to find direct infringement by CalAmp of original claim 11, now amended claim 1, of the ’727 patent.³ Omega alleged this device claim was directly infringed by CalAmp’s sale and programming of its products as well as indirectly infringed by CalAmp’s sale, programming, and advertising that induced customers to infringe.

CalAmp’s sole argument as to why it does not infringe is based on the claim limitation that the device “read[] the data related to vehicle speed from the vehicle data communications bus” and use that information to determine when “to send a remote vehicle speed exceeded notification.”⁴ J.A. 350, col. 7, ll. 13–18. Neither party sought construction of these terms, and the district court instructed the jury to give the terms their plain and ordinary meaning. The claim language above refers to the patented device’s

³ After the jury rendered its verdict, original claim 1 of the ’727 patent was amended during an *ex parte* reexamination to incorporate the limitation of dependent claim 11. Original claims 1 and 10 were thereby abandoned, and original claim 11 was cancelled.

⁴ CalAmp admits that “[t]he speed notifications sent by CalAmp’s products contain vehicle location information” as required by original claim 11. CalAmp, Opening Br. at 40.

ability to send a speed exceedance notification based on vehicle speed information retrieved from the vehicle's data bus. This functionality can be useful for remotely monitoring driver behavior in real-time.

CalAmp contends that its products do not use vehicle speed from the data bus to send a speed exceedance notification but instead use the GPS receiver on the LMU to make such determinations, and therefore it does not infringe. But the testimony by CalAmp's witnesses could reasonably be interpreted by the jury as indicating that some small percentage, less than 5%, of its devices infringed by being programmed to use vehicle speed data from the data bus to send a speed exceedance notification. *See* J.A. 14330; J.A. 14335 (CalAmp's witness testifying that "[w]e ran a count, and . . . based on the count that more than 95 percent of the speed thresholds are done by GPS, and this list here [of customer scripts using vehicle bus speed] was less than 5 percent."); 14371 (CalAmp's witness testifying "it would be a *subset*" of cases that did not infringe (emphasis added)). CalAmp further argues that if there was infringement, it was by CalAmp's customers and not by CalAmp. This argument is belied by CalAmp's response to Omega's interrogatory, where it stated it "has identified the customers for whom it [i.e., CalAmp] has loaded scripts [into devices it sold to customers] related to . . . speed alerts." J.A. 8780; *see also* J.A. 14271 ("Q. Does CalAmp develop scripts for customers? A. Yes.").

This is admittedly a close issue, but we conclude that there was sufficient evidence for a reasonable jury to find that CalAmp, at least under some circumstances, directly infringed original claim 11 of the '727 patent and therefore affirm the judgment of infringement. Our conclusion affirming the jury's judgment that CalAmp directly infringed claim 11 of the '727 by selling its products and programming a subset with infringing functionality moots the issue of whether the same acts constituted indirect infringement by CalAmp.

B. Infringement of '876 Patent Claims and '885 Patent Claims

CalAmp argues it was entitled to JMOL on (1) no direct infringement as to all of the asserted claims of the '876 patent and '885 patent, and (2) no indirect infringement as to these same claims. If it is not entitled to JMOL for indirect infringement, CalAmp argues that a new trial is required. These systems claims were alleged to be directly infringed by CalAmp's making and selling of the patented systems and indirectly infringed by CalAmp's inducement of its customers to directly infringe the systems claims.

1. Direct Infringement by CalAmp

Omega's theory of direct infringement as to the systems claims is based on CalAmp's making and selling its systems to its customers. We assume that a systems claim is infringed by the sale of the system. The question then is whether "all of the elements of the claim . . . [are] present in the accused system[s]" allegedly sold by CalAmp. *Network, LLC v. Centraal Corp.*, 242 F.3d 1347, 1353 (Fed. Cir. 2001); see *Centillion Data Sys., LLC v. Qwest Commc'ns Int'l*, 631 F.3d 1279, 1288 (Fed. Cir. 2011) ("In order to 'make' the system under § 271(a), [defendant] would need to combine all of the claim elements . . .").

We agree with CalAmp that there was insufficient evidence for the jury to have found the claim limitation "a transmitter and a receiver for receiving *signals from said transmitter*" in the claims of the '876 patent and the '885 patent was satisfied by CalAmp's selling its systems. '876 patent, col. 11, ll. 36–37 (emphasis added); '885 patent, col. 11, ll. 16–17. The evidence at trial only showed that the LMU "transmitter" transmits signals to a "receiver" on a cell tower, which can then relay that information to CalAmp's servers, and the LMU "receiver" receives signals from a "transmitter" on the cell tower. But CalAmp is not alleged to provide the cell tower. See, e.g., J.A. 8589; J.A. 16019–20. CalAmp therefore does not provide all the

required claim elements, and Omega does not argue that CalAmp directly infringes by “us[ing]” the system. *See* Omega Response Br. at 29. Thus, CalAmp was entitled to JMOL of no direct infringement by CalAmp for all of the asserted claims of the ’876 patent and ’885 patent.

2. Induced Infringement

We next consider Omega’s claims that CalAmp induced direct infringement by CalAmp’s customers.

a. Direct Infringement by CalAmp’s Customers

“[L]iability for inducement must be predicated on direct infringement.” *Limelight Networks, Inc. v. Akamai Techs., Inc.*, 572 U.S. 915, 921 (2014); *see Enplas Display Device Corp. v. Seoul Semiconductor Co.*, 909 F.3d 398, 407 (Fed. Cir. 2018). Omega’s theory here is that CalAmp’s customers directly infringed the systems claims. CalAmp argues three separate theories as to why there were no predicate acts of direct infringement by CalAmp’s customers.

First, CalAmp argues that “Omega failed to identify even one instance of direct infringement” by CalAmp’s customers that could support liability for inducement. CalAmp, Open. Br. at 39. Omega’s theory of infringement was that the customers directly infringed when they used CalAmp’s products. “[T]o use a system for purposes of infringement, a party must put the invention into service, i.e., control the system as a whole and obtain benefit from it.” *Centillion*, 631 F.3d at 1284. “[A] person must control (even if indirectly) and benefit from each claimed component.” *Intellectual Ventures I v. Motorola Mobility*, 870 F.3d 1320, 1329 (Fed. Cir. 2017). Here, there was evidence from which the jury could infer that customers controlled and used the system and received the required benefits. *See, e.g.*, J.A. 8780–87 (identifying customers using CalAmp products); J.A. 15943–45 (Omega’s technical expert testifying the asserted claims would be infringed by customer use

of CalAmp's products). Based on the record, we conclude that this theory does not warrant setting aside the jury verdict.

Second, CalAmp argues that Claim 12 of the '876 patent and all asserted claims of the '885 patent require a "device code." Omega has recognized "[t]he claims . . . require 'communication' using a vehicle device code." Omega Response Br. at 18. The district court defined "device code" to mean a "signal from a vehicle device," but the court improperly declined to define the term "vehicle device." J.A. 148–50. CalAmp seeks reversal or, in the alternative, a new trial for the judgment of infringement as to these claims because the district court's failure to construe the term "vehicle device" in this context allowed Omega to argue infringement under an erroneous theory, namely that the LMU was a "vehicle device" that could send infringing "device codes."⁵

During the *Markman* proceeding, CalAmp argued that the term "vehicle device" should be construed consistent with its use in the specification as an "electrical or electronic component in a vehicle that can be controlled and/or the status thereof read." Omega argued that the term need not be construed because such a construction would not be helpful to the jury.⁶ CalAmp argued the jury would "need

⁵ All asserted claims refer to a "vehicle device," but CalAmp does not challenge the jury's finding of infringement of claims not including the "device code" limitation under this theory. See CalAmp, Oral Arg. at 5:34–5:47; 5:49–6:01. At trial, Omega relied on the ECU as the claimed "vehicle device" in the various claims. See, e.g., J.A. 16065. It is not contested on appeal that the ECU constitutes a "vehicle device."

⁶ Although Omega contests CalAmp's construction on appeal, at the *Markman* hearing Omega conceded that "if the Court decides [the term 'vehicle device'] needs to be

to have a definition of what this term means” and that under “the O2 Micro case in [CalAmp’s] responsive brief . . . you can’t just leave the terms open for the jury to construe” because the term is “not very informative to the jury for them to understand what does this include and what does this exclude.” *Markman* Tr. 68, 70. Omega, on the other hand, did not “see that the jury would need any sort of explanation” because the claim language was “perfectly understandable.” *Markman* Tr. at 70, 71. The district court noted that “[i]t may be inherent for people with knowledge, but I don’t know that people on a jury would understand that it can be controlled or the status of it read based on what claim 1 says.” *Markman* Tr. at 72. Nonetheless, the district court refused to construe the term “vehicle device” “[s]ince CalAmp’s proposed construction of ‘vehicle device’ is taken from the patents-in-suit,” *Omega Patents, LLC v. CalAmp Corp.*, No. 6:13-cv-1950-Orl-40DAB, 2015 WL 10568791, at *6 (M.D. Fla. Feb. 20, 2015), and the court instructed the jury to give undefined terms their plain and ordinary meaning.

As we have held repeatedly, “[w]hen the parties raise an actual dispute regarding the proper scope of these claims, the court, not the jury, must resolve that dispute.” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008). The court is not absolved of this duty to construe the actually disputed terms just because the specification of the patent defines the term. Even if the parties had agreed to the construction, the district court was still obligated to give that construction to the jury in its instructions.

construed, you know, [CalAmp’s] definition is fine.” *Markman* Tr. at 71:9–11, ECF No. 236. “[I]s there anything that I can point to in CalAmp’s definition that isn’t right? I don’t think so; otherwise, I would have articulated a different definition.” *Id.* at 71:6–9.

Ultimately, Omega agreed that the construction CalAmp proposed was “fine” and was consistent with the ’876 patent’s and ’885 patent’s specification, which referred to “vehicle devices” as those “electrical/electronic devices that can be controlled and/or the status thereof read via the data communications bus.” ’876 patent col. 6 l. 60–col. 7 l. 4; ’885 patent col. 6 ll. 41–52. Based on this construction, CalAmp argues that no reasonable jury could conclude that the LMU was a “vehicle device” because the LMU is not “controlled by and/or the status thereof read via the data communications bus.”⁷

Omega’s primary theory at trial was that the LMU was a “vehicle device” and the signals it sent to the ECU were infringing “device codes.” *See, e.g.*, J.A. 8631, 15897, 16013–14, 16063–64. This theory was inconsistent with the proper claim construction to which Omega agreed, however. In the absence of guidance in the form of proper claim construction, the jury lacked a yardstick by which to measure the arguments and evidence on this issue and assess whether Omega’s infringement theory was a valid one. We cannot discern if the jury found infringement of the claims at issue based upon a theory of infringement inconsistent with the proper construction. Therefore, we must set aside the jury’s verdict of infringement as to claim 12 of the ’876 patent and all asserted claims of the ’885 patent. *Avid*, 812 F.3d at 1047. Accordingly, a new trial on this issue is warranted.

⁷ Omega argues that although CalAmp raised the issue of construing “vehicle device” during claim construction, it should have raised the issue again before the jury was instructed. We have held that in such circumstances a party is not required to continue to press forward with its claim construction when the district court has not clearly indicated that it was open to changing its mind on the issue. *O2 Micro*, 521 F.3d at 1359.

The question remains whether we should order a new trial, or, as CalAmp contends, reverse the district court's denial of its motion for JMOL of noninfringement. We conclude that JMOL is not warranted on this issue. This is so because Omega also presented evidence that the signal sent from the ECU (an uncontested "vehicle device") to the LMU could satisfy the "device code" limitation. *See, e.g.*, J.A. 16012, 16014–15, 16021, 16065.

Third, CalAmp argues that there was no infringement of claim 12 of the '876 patent and all of the asserted '885 patent claims because its products do not satisfy the claim limitation "determining a match between a read device code and the stored device codes." *See* '876 patent, col. 12, ll. 30–31; '885 patent, col. 11, ll. 22–24. Neither party sought construction of this term, and the jury was instructed to give the term its plain and ordinary meaning. This claim language refers to the process by which the multi-compatible controller determines which protocol to use in communicating with any particular vehicle and its devices. The controller first sends out a series of signals using different protocols and only signals that correspond to a vehicle device will elicit a response signal, which the controller uses to determine a match (i.e., determine the appropriate protocol to use for further communication).

CalAmp argues that there was insufficient evidence to support the jury's verdict of infringement because "[n]o reading or matching is required" by CalAmp's products. CalAmp Reply Br. at 11. Instead, after the LMU sends out signals using different protocols, "merely receiving a response [back from a vehicle device] is sufficient" to determine the appropriate protocol to use for further communication. *Id.* We conclude that, contrary to CalAmp's argument, the plain and ordinary meaning of the term "determining a match" does not require any particular order of steps. Omega's technical expert testified that the LMU operates by first sending out a series of signals based on stored device codes and then determines a match

if it receives a response from a vehicle device based on one of those signals. *See, e.g.*, J.A. 16014–18. This capability is consistent with the above claim language, and thus in this respect there was no error in the jury verdict.

We affirm the jury’s verdict as to predicate acts of direct infringement by CalAmp’s customers for claims 1, 3, 4, 5, 14, and 16 of the ’876 patent. We vacate and remand for a new trial the issue of whether there were predicate acts of direct infringement for claim 12 of the ’876 patent and all of the asserted claims of the ’885 patent.

b. Inducement by CalAmp

We next consider CalAmp’s argument that it was entitled to JMOL of no inducement of all of the asserted claims of the ’876 patent and ’885 patent. CalAmp also argues, in the alternative, for a new trial on inducement for claims 1, 3, 4, 5, 14, and 16 of the ’876 patent as to which we have sustained the jury’s verdict of direct infringement by CalAmp’s customers.

CalAmp argues that the jury’s verdict cannot be sustained based on evidence of inducement by CalAmp because the jury was not provided with written questions on the issue of inducement. The verdict form given to the jury was proposed by CalAmp. CalAmp does not argue that the jury was inappropriately instructed on the only theory of inducement. Instead, CalAmp argues that because written questions regarding direct infringement were submitted to the jury, the absence of such questions on induced infringement precluded the jury from awarding damages on that basis. But one cannot “use the answers to special questions as weapons for destroying the general verdict.” *Julien J. Studley, Inc. v. Gulf Oil Corp.*, 407 F.2d 521, 526–27 (2d Cir. 1969). The general verdict must be read in light of the

written questions submitted to the jury,⁸ jury instructions, and presentation at trial. *See Popham v. City of Kennesaw*, 820 F.2d 1570, 1575 (11th Cir. 1987) (“[T]he court must consider all the circumstances, especially the issues submitted to the jury, [and] the instructions to the jury” when interpreting the jury’s responses to written questions). Here, we conclude that induced infringement was properly before the jury, and, thus, CalAmp was not entitled to JMOL of no induced infringement on this basis.⁹

The written questions to the jury asked whether “any of the accused CalAmp devices infringed” the asserted claims of the ’876 patent and ’885 patent.¹⁰ We conclude

⁸ The written questions on direct infringement were generally, “[h]as Omega proven by a preponderance of the evidence that any of the accused CalAmp devices infringed any of the following claims of the [asserted] patent?” J.A. 163. The written question to the jury on damages was “[w]hat amount of damages, if any, do you find is adequate to compensate Omega for CalAmp’s infringement of any claim found to be valid and not licensed?” J.A. 171.

⁹ Contrary to CalAmp’s argument, *Wordtech Sys. v. Integrated Networks Sols.*, 609 F.3d 1308 (Fed. Cir. 2010) does not control this case. In *Wordtech*, the court held that a written question submitted to the jury asking whether the “*devices infringed by* ‘(B) [c]ontributing to infringement in the U.S.’” was confusing because a device “cannot possess knowledge required under § 271(c).” *Id.* at 1317. Here, and unlike in *Wordtech*, there were no written questions on inducement. The finding of intent is not found in the answers to the written questions.

¹⁰ The written questions appear to be erroneous as they ask the jury whether “CalAmp devices infringed” the claims where many of the claims are not device claims, but rather systems claims. But no objection was made at trial, and this is not presented on appeal.

that these questions should be read as asking the jury whether it found that CalAmp's customers' "use" of these products constituted infringement. This interpretation is consistent with the jury instruction regarding inducement, which noted the jury must find that the customers infringed in order to find CalAmp liable for inducement, as well as with the general damages verdict. CalAmp was not entitled to JMOL of noninfringement.

CalAmp also argues that it is entitled to a new trial on inducement as to claims 1, 3, 4, 5, 14, and 16 of the '876 patent—claims as to which we have affirmed the judgment of direct infringement by CalAmp's customers. "[T]he patentee must show . . . that the alleged infringer knowingly induced infringement and possessed specific intent to encourage another's infringement." *Enplas*, 909 F.3d at 407. "Liability for inducement 'can only attach if the defendant knew of the patent and knew as well that the induced acts constitute patent infringement.'" *Id.* (quoting *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926 (2015) (internal quotation marks omitted)); see *Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 768 (2011).

As for whether CalAmp "knowingly induced infringement and possessed specific intent to encourage another's infringement," *Enplas*, 909 F.3d at 407, the district court's erroneous exclusion of Gallin Chen's and David Bailey's testimony as to CalAmp's state of mind (described below) substantially prejudiced CalAmp's ability to present its defense for indirect infringement. Chen is the "senior director of business development in CalAmp's corporate development group," Trial Tr. at 38:25–39:1, ECF No. 182, and Bailey was CalAmp's outside counsel before CalAmp launched the accused products. This exclusion deprived CalAmp of the opportunity to support its defense that there was no inducement because it reasonably believed it did not infringe the patents at the time CalAmp launched the products at issue. *Commil*, 135 S. Ct. at 1928 ("[We] require[] proof the defendant knew the acts were infringing"

for induced infringement. (citing *Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 769–70 (2011))). Of course, CalAmp’s state of mind as to the validity of the asserted patents at the time of infringement is irrelevant to the issue of inducement. *Commil*, 135 S. Ct. at 1929 (“[A] belief as to invalidity cannot negate the scienter required for induced infringement.”). This issue is further discussed with the willful infringement issue in section IV. We therefore vacate the jury’s findings as to indirect infringement and remand for a new trial as to claims 1, 3, 4, 5, 14, and 16 of the ’876 patent.

C. Infringement of ’278 Patent Claims

The ’278 patent claims are device claims, and the sole theory of infringement as to these claims was direct infringement by CalAmp’s sale of its products. These claims have a “device code” limitation, and, for the same reasons discussed in section II.B.1.a for claim 12 of the ’876 patent and all asserted claims of the ’885 patent, we conclude a new trial is required on direct infringement by CalAmp.

III. Compensatory Damages

For the reasons discussed above, the judgment of CalAmp’s infringement has only been affirmed as to original claim 11 of the ’727 patent, and we have ordered a new trial as to the remaining claims.¹¹ The question is whether this is sufficient to sustain the award of compensatory damages despite that the “normal rule would require a new trial as to damages” when the jury renders a single verdict on damages and liability as to a subset of asserted claims has been set aside on appeal. *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1310 (Fed. Cir.

¹¹ The damages award could also have been based on abandoned original claims 1 and 10 of the ’727 patent. Those claims, of course, could not support an award of compensatory damages.

2007); *WesternGeco LLC v. ION Geophysical Corp.*, 913 F.3d 1067 (Fed. Cir. 2019).

The parties have addressed this issue in their briefs as well as in Fed. R. App. P. 28(j) letters submitted to the court after oral argument. Omega argues that the damages verdict of approximately \$2.98 million can be sustained if liability as to any one of the thirty asserted patent claims survives. No such instruction as to damages was requested or given to the jury. However, Omega relies on the testimony of its damages expert, who testified that the inclusion of a most favored nations (“MFN”) clause in previous Omega licenses would lead to the same royalty rate for infringement of any of the asserted patent claims. In a hypothetical negotiation Omega would not agree to a royalty rate for the asserted patent claims lower than prior licensing rates on a group of patents that included the asserted ones because any decrease would, by operation of the MFN clause, reduce the rates that earlier licensees were paying. *See, e.g.*, J.A. 16099–100. CalAmp argues this testimony was based on a mere assumption and that other licenses in evidence showed that different royalty rates applied to different patents. The parties also differ as to whether Omega’s evidence of prior licenses was sufficient to establish damages.¹² We need not decide these issues. This is so because we conclude there was insufficient evidence to support the damages award of approximately \$2.98 million based on the evidence presented based on infringement of

¹² Omega argues that CalAmp waived its argument as to the sufficiency of the evidence for the compensatory damages award when it did not object to entry of the licenses that the damages expert relied on. We disagree. Failure to object to admission of the evidence does not act as waiver as to a challenge to the sufficiency of the evidence for the jury to award damages. *See Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1325, 1335 (Fed. Cir. 2009).

claim 11 of the '727 patent, the sole claim as to which we have affirmed the verdict of CalAmp's infringement.

Omega's damages theory was premised on CalAmp's total actual sales of its accused products. *See* J.A. 8801, 16101. We have affirmed infringement of claim 11 of the '727 patent (a device claim) only as to a subset of CalAmp's products that were programmed to function in an infringing manner. In this respect, Omega's expert relied on testimony by CalAmp's engineer (Jeffrey Eiberger) in concluding there was infringement of claim 11. *See, e.g.*, Trial Tr. at 73, *Omega Patents, LLC v. CalAmp Corp.*, No. 6:13-cv-01950 (M.D. Fla. April 25, 2016), ECF No. 181. The engineer testified that "a script is what makes the CalAmp device do anything at all," and "[t]he CalAmp device out of the box as shipped from CalAmp doesn't do anything." Court Exhibit No. 7 at 10–11, ECF No. 147. The accused products are capable of retrieving vehicle speed from the data bus and of infringing only with additional "programming" (i.e., a script), Omega, Response Br. at 22. There is no evidence to support a finding of infringement of more than some unidentified subset of the accused CalAmp devices where the necessary scripts were installed. *Nazomi Commc'ns, Inc. v. Nokia Corp.*, 739 F.3d 1339, 1346 (Fed. Cir. 2014). Such evidence cannot support an award of damages with respect to all of CalAmp's devices. We vacate the damages award and remand for a new trial.

At the new trial, Omega will have the opportunity to establish the damages attributable to the number of accused CalAmp products that infringe based on the installation of customer scripts, and any activity found to infringe or induce infringement of the other claims.

IV. Willful Infringement and Enhanced Damages

For willful infringement, the jury was asked whether it had found CalAmp willfully "infringed a valid patent," without specifying which patent or patents or which claim or claims were willfully infringed. Based on the record, we

cannot determine which patent(s) or claim(s) the jury found to be willfully infringed, and such a finding may be based on an infringement finding that has been set aside.¹³ Under these circumstances, neither party contests that the jury's verdict as to willfulness must be vacated and a new trial conducted.¹⁴ *See Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1381 (Fed. Cir. 2013). Because the jury's willfulness finding must be vacated, so too must the resulting enhanced damages and attorney's fees award by the district court, both of which were explicitly based on the willful infringement finding.¹⁵ *See*

¹³ The verdict may also have been based on original claims 1 and 10 of the '727 patent that were abandoned during the ex parte reexamination proceeding. A verdict of willful infringement as to these claims would not have been sustainable.

¹⁴ "Q. On the willfulness [issue], you agree that if we hold that there has to be a new trial on any of these claims or the JMOL should have been granted on any of these claims, the willfulness conclusion has to be set aside, right? A. I believe . . . that is accurate." Omega, Oral Arg. at 28:34–28:56; *see* CalAmp Reply Br. at 32.

¹⁵ We note that to the extent the district court's enhanced damages decision relied on the conclusion that it was highly unusual for an attorney to give an oral opinion without also providing a written opinion and that there would not be increased cost to receiving such a written opinion, there is no evidence in the record to support that conclusion. We are also skeptical that such a conclusion is consistent with industry practice. Whatever skepticism the district court had of Chen's and Bailey's testimony is irrelevant to the issues of inducement and willful infringement as it was the jury's prerogative as fact-finder whom to credit.

Exmark Mfg. Co. v. Briggs & Stratton Power Prods. Grp., LLC, 879 F.3d 1332, 1352–53 (Fed. Cir. 2018).

Because willful infringement will be retried, we find it appropriate to address evidentiary issues as to intent that will likely arise again on remand. Moreover, the claimed error also directly relates to CalAmp’s intent as to infringement (but not invalidity) and forms the basis for our earlier ruling concerning the need for a new trial on inducement.

CalAmp argues that the district court erred by excluding Chen’s testimony as to CalAmp’s state of mind regarding infringement and validity of the asserted patent claims. CalAmp also argues that testimony by its outside counsel at the time of the alleged infringement, David Bailey, was inappropriately limited to testifying only as to his conclusions, without being able to provide a reasonable explanation of his analysis. CalAmp argues that this error substantially prejudiced its defense, particularly where Omega relied on the lack of such testimony in its closing arguments in support of willfulness. *See, e.g.*, J.A. 16720 (“We heard all about [Chen’s] big stack and his little stack [of LMU-related patents]. Didn’t hear any analysis of those patents.”).

First, we conclude that the district court’s exclusion of Chen’s testimony relating to CalAmp’s state of mind prior to the alleged acts of infringement was an abuse of discretion. Chen’s testimony on this issue was clearly relevant, as the evidence shows he was the “main person” tasked with investigating the patent landscape “before CalAmp decided to release” the accused products and he was central to CalAmp’s decision to launch the accused products. J.A. 16240, 16238; *see* J.A. 16238–39, 16243–45, 16297–300. He testified that during his investigation he would discuss his findings with his superior, Garo Sarkissian, who was part of CalAmp’s executive team. J.A. 16295–97. “CalAmp rel[ied] on the searching that [Chen] did to . . . see the lay of the land.” J.A. 16311. Despite being able to testify

as to his investigation into whether the asserted patent claims would be infringed and were valid, he was prevented from stating his conclusions. *See, e.g.*, J.A. 16213. In particular, the district court excluded this proffered testimony as not appropriately disclosed expert testimony under Federal Rule of Civil Procedure 26. But Chen was not provided to offer expert testimony on non-infringement or invalidity.¹⁶ Rather, he was provided to offer testimony as to the bases for CalAmp's state of mind, one of which was his investigation of the patent landscape. Therefore, he should have been allowed to present a limited summary of his conclusion from this investigation and the basis for it.

Based on a hearsay objection, Chen was also prevented from answering the question, “[b]ased on the oral opinion [from counsel], did you have an understanding whether counsel believed the [LMU] infringed the '885 patent?” J.A. 16299–300. The answer to that question would not implicate hearsay, as it was not being offered for the truth of the matter asserted (i.e., whether the patent was actually infringed). Fed. R. Evid. 801(c)(2). Instead, it was offered for the purpose of establishing the effect on the listener (i.e., that CalAmp reasonably believed it did not infringe the patent based, in part, on counsel's opinion). *See* Wright & Miller § 6719; 5 Jack B. Weinstein & Margaret A. Berger, Weinstein's Federal Evidence, § 801.11 (2019).

This erroneous limitation in Chen's testimony substantially prejudiced CalAmp by excluding testimony that was

¹⁶ Where district courts have excluded lay testimony on the issues of invalidity and infringement, we have typically sustained such exclusion when the case involves complex technology. *Compare Air Turbine Tech., Inc. v. Atlas Copco AB*, 410 F.3d 701, 713–14 (Fed. Cir. 2005), *with Wyers v. Master Lock Co.*, 616 F.3d 1231, 1242 (Fed. Cir. 2010).

critical to the question of whether CalAmp had the required mental state.

Second, the district court erred by preventing CalAmp’s outside counsel, Bailey, from testifying as to the analysis he allegedly provided to CalAmp (Chen and his superior, Sarkissian) prior to the launch of the products at issue in the litigation. *See* J.A. 16297–98 (“[W]e would conference call in on the speaker phone Mr. Sarkissian, and so he would also hear the opinion of our counsel.”). We have repeatedly recognized that advice of counsel is relevant to induced infringement and willfulness. For example, we held in *Broadcom Corp. v. Qualcomm Inc.*, 543 F.3d 683, 699 (Fed. Cir. 2008), that “opinion-of-counsel evidence” is relevant to the intent analysis for induced infringement because such evidence “may reflect whether the accused infringer ‘knew or should have known’ that its actions would cause another to directly infringe.” We further held in *Betcher Industries, Inc. v. Bunzl USA, Inc.*, 661 F.3d 629, 649 (Fed. Cir. 2011), that “[t]he fact and general content of” a noninfringement opinion from defendant’s patent lawyer “was relevant and admissible . . . with respect to [defendant’s] state of mind and its bearing on [induced] infringement.”¹⁷

As to willfulness, an accused infringer’s reliance on an opinion of counsel regarding noninfringement or invalidity of the asserted patent remains relevant to the infringer’s state of mind post-*Halo*. We recently held in *Exmark Manufacturing Co. v. Briggs & Stratton Power Products Group*,

¹⁷ *See also DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1307 (Fed. Cir. 2006) (en banc) (holding that the record supported jury verdict of no induced infringement where it showed defendant contacted an Australian attorney and “obtained letters from U.S. patent counsel advising that [its product] did not infringe”).

LLC, 879 F.3d 1332, 1353 (Fed. Cir. 2018), that “[t]o the extent that [the district court] excluded evidence relevant to [defendant’s] state of mind at the time of the accused infringement, [that decision] d[id] not comport with the standard articulated in *Halo*.” *See also Polara Eng’g Inc. v. Campbell Co.*, 894 F.3d 1339, 1353–54 (Fed. Cir. 2018) (recognizing the relevance of “reliance on competent opinion of counsel” to willfulness).

The district court only allowed Bailey to testify as to his bare conclusions regarding infringement and validity, “but not the substance of [his] opinion.” J.A. 16338. Bailey should also have been allowed to present a reasonable explanation as to how he arrived at his conclusions. We agree that if not appropriately cabined Bailey’s testimony (and Chen’s testimony as well) could confuse the jury into concluding that the testimony was relevant to the issues of infringement and invalidity, rather than CalAmp’s mental state as to these issues. *See* Fed. R. Evid. 403. We note that Bailey’s written opinions to CalAmp after the current suit was filed were appropriately excluded since they were not contemporaneous with the infringing activity. We also note that Bailey was not relying on the written opinions to refresh his recollection of his prior oral statements.

On remand, the district court should allow Chen to testify as to the conclusions he reached from his own independent investigation and a summary of the basis for that conclusion and to present an appropriately limited summary as to the opinion of counsel he received. *See* Fed. R. Evid. 403. Of course, Chen’s investigation is only pertinent in so far as it was communicated to the defendant’s decisionmakers prior to the alleged infringement. Similarly, Bailey should be allowed to provide a limited summary of the basis for his conclusion. The bases for Bailey’s oral conclusions or the methodology used to arrive at them is, of course, only relevant to the issue of defendant’s state of mind for inducement and willful infringement to the extent

that information was actually communicated to the defendant's decisionmakers prior to infringement.

CONCLUSION

We affirm the jury's verdict that the asserted patent claims were not invalid, except for original claims 1 and 10 of the '727 patent, which were abandoned during the ex parte reexamination. We set aside the judgment of infringement as to original claims 1 and 10 of the '727 patent. We affirm the judgment that CalAmp directly infringed original claim 11 (amended claim 1) of the '727 patent. We reverse the judgment as to CalAmp's direct infringement of all asserted claims of the '876 patent and '885 patent. We affirm the finding that CalAmp's customers directly infringed claims 1, 3, 4, 5, 14, and 16 of the '876 patent, but we vacate and remand for determination as to whether CalAmp had the requisite mental state for induced infringement. Also, we vacate the judgment of indirect infringement of claim 12 of the '876 patent and the asserted claims of the '885 patent and remand for a new trial to determine whether (1) there were predicate acts of direct infringement for these claims and (2) whether CalAmp had the requisite mental state for induced infringement. We also vacate the judgment of infringement as to all of the asserted '278 patent claims and remand for a new trial to determine whether CalAmp directly infringed these claims.

We vacate and remand for a new trial the compensatory damages award, the jury's willfulness finding, and the district court's enhanced damages and attorney's fees award.

On remand, the parties are urged to achieve clarity by clearly presenting evidence, objections, arguments, and jury instructions as to direct and indirect infringement, compensatory damages, and willful infringement, assuming the parties choose to continue pursuing such issues, so

that this court may effectively fulfill its appellate function in in any further review arising from the retrial.

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

COSTS

No costs.

ADDENDUM

Claims 1 and 12 of the '876 patent recite:

Claim 1. A control system for a vehicle comprising a data communications bus and at least one vehicle device connected to the data communications bus, the control system comprising:

a transmitter and a receiver for receiving signals from said transmitter; and

a multi-vehicle compatible controller at the vehicle and cooperating with said transmitter and receiver, said multi-vehicle compatible controller generating at least one set of command signals on the data communications bus for the at least one vehicle device, the at least one set of command signals comprising at least one working command signal and at least one non-working command signal for a given vehicle to thereby provide command compatibility with a plurality of different vehicles.

Claim 12. A control system according to claim 1 wherein said multi-vehicle compatible controller is further for storing a set of device codes for a given vehicle device for a plurality of different vehicles, for reading a device code from the data communications bus, and for determining a match between a read device code and the stored device codes to thereby provide reading compatibility with a plurality of different vehicles.

'876 patent, col. 11, ll. 32–48 (emphases added); col. 12, ll. 26–33 (emphases added).

Claim 1 of the '885 patent recites:

A control system for a vehicle comprising a data communications bus and at least one vehicle device connected thereto, the control system comprising:

a transmitter and a receiver for receiving signals from said transmitter; and

a multi-vehicle compatible controller cooperating with said transmitter and said receiver and for storing a set of device codes for a given vehicle device for a plurality of different vehicles, for reading a device code from the data communications bus, and for determining a match between a read device code and the stored device codes to thereby provide compatibility with a plurality of different vehicles.

'885 patent, col. 11, ll. 13–25 (emphases added).

Claim 1 of the '278 patent recites:

A multi-vehicle compatible tracking unit for a vehicle comprising a vehicle data bus extending throughout the vehicle, the multi-vehicle compatible tracking unit comprising:

a vehicle position determining device;

a wireless communications device;

a multi-vehicle compatible controller for cooperating with said vehicle position determining device and said wireless communications device to send vehicle position information;

said multi-vehicle compatible controller to be coupled to the vehicle data bus for communication thereover with at least one vehicle device using at least one corresponding vehicle device code from

among a plurality thereof for different vehicles;
and

a downloading interface for permitting downloading of enabling data related to the at least one corresponding vehicle device code for use by said multi-vehicle compatible controller.

'278 patent, col. 25, l. 64–col. 26 l. 15 (emphases added).

At the time the jury rendered its verdict, claims 1 and 11 of the '727 patent recited:

Claim 1. A speed exceeded notification device for a vehicle of a type comprising a vehicle data communications bus extending throughout the vehicle, and at least one vehicle device generating data related to vehicle speed on the vehicle data communications bus, the speed exceeded notification device comprising:

a wireless communications device; and

a controller to be coupled to the vehicle data communications bus for

reading the data related to vehicle speed from the vehicle data communications bus, and

determining when a vehicle speed exceeds a speed threshold for a first time period and based thereon cooperating with said wireless communications device to send a remote vehicle speed exceeded notification.

Claim 11. The speed exceeded notification device according to claim 1 wherein the remote vehicle speed exceeded notification further comprises a vehicle position.

J.A. 350 (col. 7, ll. 4–17; 48–50) (emphases added).

Original claim 1 of the '727 patent was amended during an ex parte reexamination to incorporate the limitation of dependent claim 11 (italicized below), which was canceled, and now recites:

Amended Claim 1. A speed exceeded notification device for a vehicle of a type comprising a vehicle data communications bus extending throughout the vehicle, and at least one vehicle device generating data related to vehicle speed on the vehicle data communications bus, the speed exceeded notification device comprising:

a wireless communications device; and

a controller to be coupled to the vehicle data communications bus for

reading the data related to vehicle speed from the vehicle data communications bus, and

determining when a vehicle speed exceeds a speed threshold for a first time period and based thereon cooperating with said wireless communications device to send a remote vehicle speed exceeded notification, *and wherein the remote vehicle speed exceeded notification comprises a vehicle position.*

J.A. 353 (Col. 1, ll. 21–38) (emphases added).