

# United States Court of Appeals for the Federal Circuit

03-1083, -1469, -1470, -1471

POWER MOSFET TECHNOLOGIES, L.L.C.  
and THIRD DIMENSION SEMICONDUCTOR, INC.,

Plaintiffs-Appellants,

v.

SIEMENS AG, INFINEON TECHNOLOGIES CORPORATION,  
and INFINEON TECHNOLOGIES AG,

Defendants-Cross Appellants,

and

STMICROELECTRONICS, N.V., STMICROELECTRONICS, S.R.L,  
and STMICROELECTRONICS, INC. (formerly known as  
SGS-Thomson Microelectronics, Inc.),

Defendants-Cross Appellants,

and

INTERNATIONAL RECTIFIER CORPORATION  
and INTERNATIONAL RECTIFIER CORPORATION NORTH CAROLINA,

Defendants-Cross Appellants.

Allen M. Sokal, Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., of Washington, DC, argued for plaintiffs-appellants. With him on the brief were Donald R. Dunner and Smith R. Brittingham IV. Of counsel on the brief was Alfonso Garcia Chan, Shore Deary, L.L.P., of Dallas, Texas.

Robert Neuner, Baker Botts L.L.P., of New York, New York, argued for defendants-cross appellants Siemens AG, et al. With him on the brief were Neil P. Sirota of New York, New York; and Jeffrey D. Baxter, of Dallas, Texas.

Constantine L. Trela, Jr., Sidley Austin Brown & Wood LLP, of Chicago, Illinois, argued for defendants-cross appellants STMicroelectronics, N.V., et al. With him on the brief was James P. Bradley, of Dallas, Texas. Of counsel on the brief were Bruce S. Sostek and Jane Politz Brandt,

Thompson & Knight LLP, of Dallas, Texas. Of counsel was Li Chen, Sidley Austin Brown & Wood LLP, of Dallas, Texas; and Max Ciccarelli, Thompson & Knight LLP, of Dallas, Texas.

David E. Killough, Vinson & Elkins L.L.P., of Austin, Texas, for defendants-cross appellants International Rectifier Corporation, et al. Of counsel was Glenn W. Trost, Coudert Brothers LLP, of Los Angeles, California.

Appealed from: United States District Court for the Eastern District of Texas

Judge David Folsom

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

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DECIDED: August 17, 2004

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Before MICHEL, GAJARSA, and PROST, Circuit Judges.

GAJARSA, Circuit Judge.

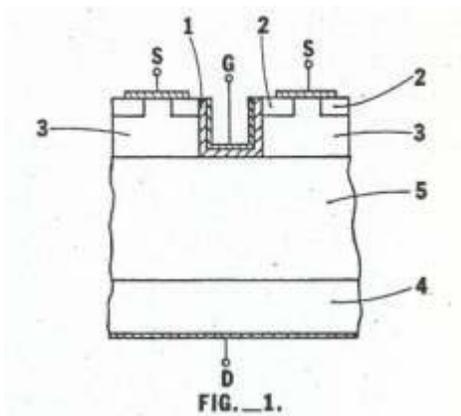
Power Mosfet Technologies, L.L.C. (“PMT”), appeals the final judgment of the United States District Court for the Eastern District of Texas that United States Patent No. 5,216,275 (the “275 patent”) was not infringed by defendants-cross appellants Siemens AG, Infineon Technologies Corporation, and Infineon Technologies AG (collectively, “Infineon”), or by defendants-cross appellants STMicroelectronics, N.V., STMicroelectronics, S.R.L., and STMicroelectronics, Inc. (collectively,

“ST”). Power Mosfet Techs. v. Siemens AG, No. 2:99-CV-168 (E.D. Tex. Sept. 30, 2002). PMT also appeals the district court’s denial of its motion for a new trial. In the event that this court accepts certain arguments made by PMT, Infineon and ST conditionally cross-appeal the district court’s judgment that the ’275 patent was not anticipated by United States Patent No. 4,754,310 (the “Coe patent”). ST also conditionally cross-appeals the district court’s judgment that the ’275 patent is not anticipated by United States Patent No. 3,171,068 (the “Denkewalter patent”). Infineon alone cross-appeals the district court’s denial of its motion for attorney fees. Finally, International Rectifier Corporation and International Rectifier Corporation North Carolina (collectively, “IR”) cross-appeal the district court’s denial of its motion for attorney fees under Federal Rule of Civil Procedure 54(d)(1) following the dismissal with prejudice of PMT’s claims against it. For the reasons stated herein, we affirm the district court’s judgment of noninfringement, its denial of PMT’s motion for a new trial, and its denial of Infineon’s motion for attorney fees and IR’s motion for costs.

## I. BACKGROUND

PMT is a Texas limited liability corporation with its corporate offices in Marshall, Texas, and is the owner of the ’275 patent. The ’275 patent is entitled “Semiconductor Power Devices with Alternating Conductivity Type High-Voltage Breakdown Regions.”

### A. Semiconductor Technology



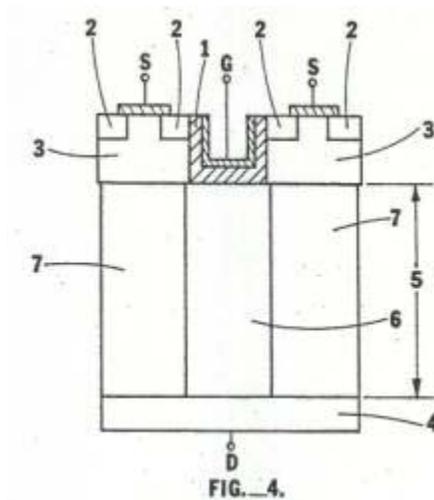
Semiconductor power devices control the flow of electricity through an electronic circuit. They are typically constructed of silicon, which, by itself, is not a very good conductor of electricity. Silicon's conductivity, however, can be enhanced by a process known as doping. Doping adds impurities to the crystal structure of pure silicon and creates either a surplus or deficiency of free electrons in the silicon material. Both conditions enable the flow of current through the material. When doping results in a surplus of electrons, the material is described as "n-type" because it has a net negative charge. When the result is a deficiency of electrons (i.e., a surplus of "holes") the material is described as "p-type" because it has a net positive charge. Within the n-type and p-type categories, the material may be further categorized as heavily doped ( $n^+$  or  $p^+$  regions) or lightly doped ( $n^-$  or  $p^-$  regions).

The semiconductor power device described in the '275 patent is known as a MOSFET. A cross-section from a traditional MOSFET is reproduced above from figure 1 of the '275 patent. The '275 patent describes the fabrication process of the traditional MOSFET device as follows: an  $n^-$  layer 5 is grown on an  $n^+$  substrate 4, followed by the growth of a  $p^+$  layer 3 on the top of the  $n^-$  layer 5. The above-described process may also be performed with p-type materials substituted for the n-type materials, and n-type materials for the p-type. '275 patent, col. 5, ll. 23-29. In the traditional MOSFET design, layer 5 consists of a single conductivity type, either n- or p-type.

Also shown in figure 1 are the electrical connections of the semiconductor device. The terminals labeled "S" are the "source" terminals, where a positive voltage source is connected to the device. The terminal labeled "D" is the "drain" terminal, where the negative voltage connection is made. Terminal "G" is the "gate" terminal, and controls the current flow or, simply put, turns the device on and off. When on, current flows from the source to drain and, when off, current flow is blocked. The '275 patent refers to region 5 as the "voltage sustaining layer" because, when not conducting current, it sustains a

voltage between the S and D terminals.

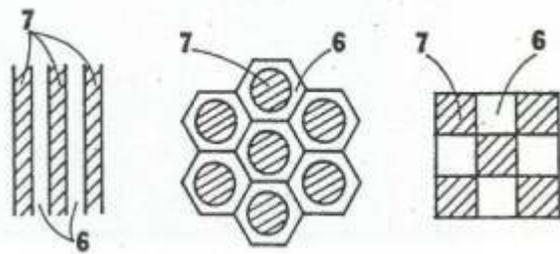
The on and off states of a MOSFET device are controlled by applying a voltage to the gate terminal. When applied, the gate voltage creates an electric field inside the device that manipulates the electrons in the doped silicon to create conducting channels for current through the silicon material. When the gate voltage is removed, the electrons return to their normal positions and the voltage sustaining layer again prevents current from flowing through the device.



Two characteristics of MOSFETs are relevant to understanding the invention disclosed by the '275 patent. The "on-resistance" (" $R_{on}$ ") of the device is the resistance of the conducting channel through the semiconductor material. The higher the on-resistance, the greater the power loss (and accompanying heat generation) resulting from the current flow through the device. The second characteristic is the "breakdown voltage" (" $V_b$ "), which is the maximum voltage that the semiconductor device can sustain between its terminals. In traditional semiconductor devices, there is an exponential relationship between  $V_b$  and  $R_{on}$ . See '275 patent, col. 1, ll. 29-31. Higher  $V_b$  values are a desirable characteristic in a semiconductor device, but the resulting benefit must be balanced against the corresponding undesirable increase in  $R_{on}$  values.

The invention of the '275 patent is a design for a voltage sustaining layer that results in a new relationship between  $V_b$  and  $R_{on}$ . According to the '275 patent, the new relationship allows lower  $R_{on}$

values without the same magnitude of accompanying loss in  $V_b$  that results in traditional semiconductor devices. *Id.* at col. 1, ll. 55-66. Figure 4, reproduced from the '275 patent above, depicts a semiconductor device according to the invention. An n-type layer 5 is grown on an  $n^+$  substrate 4. Layer 5 is then "trenched" to make deep U-grooves where the bottoms of the grooves "just reach [contact layer] 4." *Id.* at col. 5, l. 35. The trenches are then filled with p-material, resulting in alternating n-regions 6 and p-regions 7 that make up the voltage sustaining layer. Finally, a  $p^+$  region 3 is grown over the alternating n- and p-regions. As with the traditional MOSFET devices, the '275 patent explains that p-type material can be substituted for n-



type material, and vice versa.

The '275 patent designates its voltage sustaining layer the "composite buffer layer, or shortly, CB-layer," due to its alternating semiconductor regions. *Id.* at col. 1, ll. 57-58. The '275 patent further discloses several geometries for the differing conductivity areas, which are reproduced above.

Independent claims 11 and 14 and dependent claims 12, 13, and 16 are at issue in this appeal. Claim 11 is representative,<sup>[1]</sup> and is set out below:

A semiconductor power device comprising:

a first contact layer of a first conductivity type;

a second contact layer of a second conductivity type; and

a voltage sustaining layer between said first and second contact layers,

said voltage sustaining layer comprising

first semiconductor regions of the first conductivity type and second semiconductor regions of a second conductivity type,

said first and second semiconductor regions being alternately

arranged,

the first contact layer contacting all said first semiconductor regions and said second semiconductor regions to form a first interface,

the second contact layer contacting with all the first and second semiconductor regions to form a second interface

wherein the first and second semiconductor regions are doped with dopants and the effective dopant distribution in every region in the voltage sustaining region is non-uniform, the dopant concentration in the first semiconductor regions is greater near the first contact layer than near the second contact layer and the dopant concentration in the second semiconductor regions is greater near the second contact layer than near the first contact layer.

Id. at col. 7, l. 58 to col. 8, l. 14.

B. The District Court Proceedings

PMT sued Infineon, IR, and ST in the Eastern District of Texas. On August 17, 2000, PMT moved the court for dismissal of IR from the lawsuit, explaining that subsequent discovery had revealed that IR had “not actually made any commercial sales of any accused products.” PMT requested that the court dismiss its claims against IR with prejudice to its right to reassert them. Accompanying the motion was a “Certificate of Conference,” which explained that, “while the IR Defendants do not consent to the order or join in the Motion, the IR Defendants will not file any opposition, and further agree that the Court may act on this motion without delay.” The district court granted the motion and dismissed IR from the lawsuit on the same day. The dismissal of IR left only ST and Infineon as the remaining defendants in the action.

The proceedings in the Eastern District began with a Markman hearing, during which a Special Master construed the disputed claim terms of the '275 patent. Power Mosfet Techs. v. Siemens AG, No. 2:99CV168-TH (E.D. Tex. Mar. 12, 2001) (“Special Master Report”). The Special Master began with the term “contact layer,” which he construed as:

the semiconductor material between the metal contacts and the voltage sustaining layer that is designed to perform two contacting functions: (a) permit ohmic contacts to be formed at the terminals (e.g., the source or emitter contacts) and (b) provide a connection

between the metal contacts and the voltage sustaining layer such that the reverse voltage across the device terminals is sustained primarily across the voltage sustaining layer.

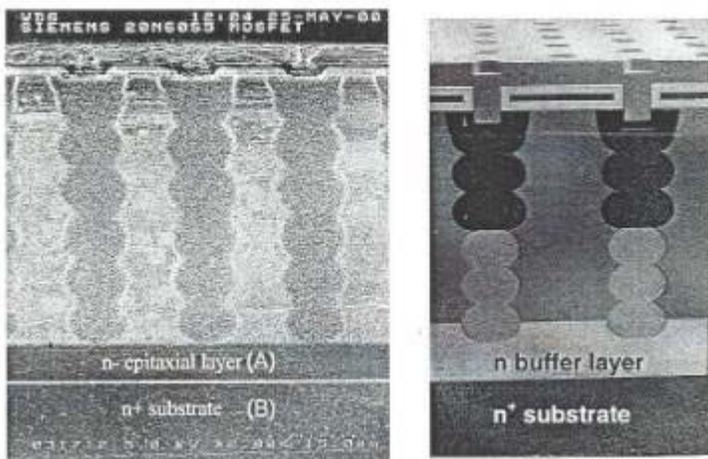
Id. at 21. “Contacting,” according to the Special Master, meant “permitting or enabling contact,” and could be satisfied either physically or electrically. Id. at 26.

The Special Master turned next to the term “voltage sustaining layer,” which he explained was “the layer that primarily sustains the voltage applied between the terminals of the device.” Id. at 31. The Special Master noted, however, that the voltage sustaining layer was modified by the term “comprising,” which permitted structures other than the alternating regions of the CB-layer described in the claim. Id. at 32. “Thus,” the Special Master concluded, “a voltage sustaining layer may also contain additional structures or layers (in addition to the CB-layer), as long as those structures perform the function of sustaining the voltage across the terminals of the device.” Id. at 33.

The Special Master also construed the term “interface” to mean “the common boundary between two regions or layers in the device.” The Special Master explained that the term was used throughout the claims to mean the boundary between the contact layer and the voltage sustaining layer, which was “necessarily physical” as described in the ’275 patent. Id. at 36. Finally, the Special Master construed “non-uniform” as carrying its plain meaning of “not uniform,” and explained that “nothing in the patent precludes a non-uniformity of the specific type described that is realized through conventional semiconductor processing techniques.” Id. at 40. The district court adopted the Special Master’s constructions with what it described as a slight clarification of the construction of “contacting,” explaining that, in light of the embodiments contained in the ’275 patent, “[c]onstruing ‘contacting’ as being restricted to physically touching would improperly read some embodiments into claim 11, and thereby, improperly limit its scope.” Power Mosfet Techs. v. Siemens AG, No. 2:99CV168 (E.D. Tex. Apr. 23, 2001) (order adopting Special Master’s claim construction) (“Claim Construction Order”). The terms in the Special Master Report were construed in isolation, and at no other time did the district court or the Special Master construe the claims as a whole.

Following a bench trial, the district court found that neither Infineon’s “CoolMOS” products nor ST’s “MDMesh” products infringed the ’275 patent. Beginning with Infineon’s CoolMOS product, the

district court provided several reasons that the claim limitations were not satisfied. First, the court explained, the presence of “floating p-columns” under the gate electrode pad and in the edge termination region precluded the formation of a “first contact layer” that contacted all of the first semiconductor regions to form a first interface. Power Mosfet Techs., slip op. at 36-37. The p-columns, the district court explained, were the referenced “first semiconductor regions,” and, because they did not physically touch the first contact layer to form the interface as required by the claim construction, that limitation was not satisfied. Id. The physical touching requirement of “interface” as construed by the Special Master, therefore, overrode the less demanding “physical or electrical” requirement of “contacting,” imposing a requirement of physical contact when combined.



The district court had similar difficulties with the requirement that “the second contact layer contact[] with all the first and second semiconductor regions to form a second interface.” Id. at 38. Infineon manufactured the CoolMOS product with an additional n-buffer layer between the alternating semiconductor region and the n<sup>+</sup> contact layer, as shown in the figure above from Infineon’s trial exhibit. The district court found that this n-buffer layer was part of the voltage sustaining layer, rather than part of the contact layer as stated by PMT’s expert. Id. at 32, 33. The district court based this classification on testimony at trial that, in a 600-volt CoolMOS device, the n-buffer layer supported between 50 and 100 volts across its thickness. Under the Special Master’s functional definition of the term, the district court explained, the voltage sustaining capabilities of the n-buffer layer placed it properly within the voltage sustaining layer, which, by reason of the “comprising” transition, could

contain structures in addition to the alternating semiconductor regions of the CB-layer. Id. at 30-31. Because the n-buffer layer prevented the alternating semiconductor regions from forming a physical interface with the second contact layer, the district court concluded that this element was not present in the CoolMOS product.

Next, the district court found that the requirement in claim 11 that “the effective dopant distribution in every region in the voltage sustaining region is non-uniform” and that “the dopant concentration in the first semiconductor regions is greater near the first contact layer than near the second contact layer and the dopant concentration in the second semiconductor regions is greater near the second contact layer than near the first contact layer” was not satisfied. Specifically, the district court found that the evidence of testing submitted by PMT tended to demonstrate that the dopant concentrations in the n-type regions of the device were in fact uniform and, further, that the test results were unreliable. Id. at 40-64. The district court found similar reliability problems with the test results for the dopant concentrations in the p-type regions of the semiconductor, but also relied on its finding that the distributions did not form a “linear gradient or slope” as the court stated was required under the claims. Id. at 68-69. Accordingly, for the variety of reasons stated above, the district court found that Infineon’s CoolMOS device did not infringe the ’275 patent. Id. at 72.

The district court next analyzed the evidence regarding ST’s MDMesh product and concluded that it also did not infringe the ’275 patent. While the MDMesh did not have the same floating p-columns that precluded the CoolMOS from meeting the “first interface” limitation of the claims, it did have a similar n-buffer layer separating the alternating semiconductor regions from the n<sup>+</sup> substrate. Id. at 78. As with the CoolMOS product, the district court concluded that the n-buffer layer comprised part of the voltage sustaining region and, accordingly, the n<sup>+</sup> contact layer did not “contact” the alternating semiconductor regions “to form a second interface.” Id.

The district court also found that the MDMesh, like the CoolMOS, did not satisfy the non-uniform doping requirement of claim 11. Citing numerous inaccuracies in PMT’s analysis of the MDMesh product, the district court explained that PMT’s “erring methodologies do not meet [the]

burden of proof for showing infringement” with regard to the n-type regions of the voltage sustaining layer. *Id.* at 86. Furthermore, the court continued, any deviation that was shown by PMT was less than 1% and therefore below the 10% deviation in the Coe patent that the inventor described as “uniform” during prosecution. *Id.* at 87. Finally, the court explained, the effective dopant concentration—to the extent any change was shown at all—revealed two gradients rather than a single gradient as required by claim 11. *Id.* at 88. Regarding the p-type regions, the court discerned no measurable difference between the top and bottom of the columns. Based on the foregoing, the district court concluded that ST’s MDMesh product also did not infringe the ’275 patent.

After concluding that neither of the accused products infringed the ’275 patent, the district court turned to the invalidity challenges advanced by the parties. *Id.* at 91. The district court rejected defendants’ arguments that the Denkwalter patent anticipated the ’275 patent, explaining that out-diffusion occurring during the manufacturing processes was insufficient for the non-uniform dopant distribution requirement of claim 11. *Id.* at 106-07. The court reached the same conclusion regarding the Coe patent based on a similar rationale. *Id.* at 112.

Based on the foregoing, the district court entered final judgment that: (1) the ’275 patent had not been proven invalid or unenforceable; (2) the CoolMOS product did not infringe the ’275 patent; and (3) the MDMesh product did not infringe the ’275 patent. PMT timely appealed, and we have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

## II. DISCUSSION

### A. Standard of Review

We review a district court’s infringement determination using a two-step inquiry. The first step is a proper construction of the meaning and scope of the claims. Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306 (Fed. Cir. 2003). Claim construction is a question of law, reviewed by this court de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1451 (Fed. Cir. 1998) (en banc). The second step requires a comparison of the properly construed claim to the accused

device. Anchor Wall Sys., 340 F.3d at 1306. A district court's determination as to whether the claims, properly construed, read on the accused device is a question of fact, which we review for clear error. Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 976 (Fed. Cir. 1999).

Whether a patent is invalid as anticipated is also a two-step inquiry. Like infringement, the first step requires construing the claim, which is a question of law. Oakley, Inc. v. Sunglass Hut Int'l, 316 F.3d 1331, 1339 (Fed. Cir. 2003). The second step in the analysis requires a comparison of the properly construed claim to the prior art and is a factual matter reviewed for clear error. Id. at 1339; Apple Computer, Inc. v. Articulate Sys., Inc., 234 F.3d 14, 20 (Fed. Cir. 2000).

We review the denial of a motion for a new trial under the law of the regional circuit. Riverwood Int'l Corp. v. R. A. Jones & Co., 324 F.3d 1346, 1352 (Fed. Cir. 2003). The Fifth Circuit reviews the denial of a motion for a new trial for abuse of discretion. Sibley v. Lemaire, 184 F.3d 481, 487 (5th Cir. 1999). We also apply regional circuit law when reviewing a district court's grant or denial of sanctions under Federal Rule of Civil Procedure 11. Phonometrics, Inc. v. Econ. Inns of Am., 349 F.3d 1356, 1361 (Fed. Cir. 2003). The Fifth Circuit reviews decisions regarding Rule 11 sanctions for abuse of discretion. Friends for Am. Free Enters. Ass'n v. Wal-Mart Stores, Inc., 284 F.3d 575, 577 (5th Cir. 2002). Review of whether a case is exceptional under 35 U.S.C. § 285, however, is a matter of Federal Circuit law. We review a district court's findings of fact for clear error, and the legal standard applied de novo. Brasseler, U.S.A. I., L.P. v. Stryker Sales Corp., 267 F.3d 1370, 1378-79 (Fed. Cir. 2001). If a district court properly finds a case to be exceptional, we review its decision regarding the award of attorney fees to the prevailing party for abuse of discretion. Id. at 1379.

When reviewing a district court's decision regarding costs to a prevailing party under Federal Rule of Civil Procedure 54(d)(1), we engage in a bifurcated inquiry. Whether a party is prevailing within the meaning of Rule 54 is a matter of Federal Circuit law and is reviewed de novo. Manindra Milling Corp. v. Ogilvie Mills, 76 F.3d 1178, 1180-83 (Fed. Cir. 1996). The district court's actual decision regarding an award of costs, however, is reviewed under the law of the regional circuit. Id. at 1183. The Fifth Circuit reviews decisions on whether to award costs under Rule 54 for abuse of

discretion, but applies a strong presumption that a prevailing party will be awarded costs and that any district court denying costs will provide an explanation for its decision. Schwarz v. Folloder, 767 F.2d 125, 131 (5th Cir. 1985).

## B. Analysis

### 1. Claim Construction of “Contacting . . . to Form [an] Interface”

We begin our discussion with the requirements present in both independent claims 11 and 14 of a “contact layer contacting with all the first and second semiconductor regions to form [an] interface.” ’275 patent, col. 8, ll. 2-5. The district court found that the “second interface” was not formed in either Infineon’s or ST’s device because the alternating semiconductor regions in the voltage sustaining layer did not physically touch the second contact layer. Power Mosfet Techs., slip op. at 38, 78. PMT challenges this conclusion on two fronts. First, PMT challenges the claim construction directly, disputing the district court’s physical contact requirement. Second, PMT argues that the district court’s conclusion of noninfringement is based on a changed construction of the term “contacting,” from permitting either electrical or physical contact as construed by the Special Master at the Markman hearing and subsequently adopted by the district court, to requiring physical contact in the district court’s final decision. To correct the error, PMT argues, the claims should be returned to the original interpretation attributed to them by the Special Master and district court, which, according to PMT, permitted satisfaction of the claim limitations without physical contact between the CB-layer and the contact layer. ST and Infineon both respond that there has been no change in claim construction and that what PMT actually disagrees with is the factual infringement determination by the district court.

As explained, the Special Master interpreted “contacting” functionally as permitting either electrical or physical contact. Special Master Report at 26. The Special Master’s construction of “interface,” however, explained that the term, as used in the ’275 patent, was “necessarily physical.” Id. at 37. PMT does not challenge the Special Master’s construction of the individual terms “contacting” or “interface,” and we see no basis in the patent specification for disturbing them. In fact, PMT explained during a hearing following the Special Master’s recommendations that it “believe[d] that the Special

Master correctly construed the term interface, and [it was] happy with the construction of the term interface.” (J.A. at 203017). When the Special Master’s interpretations are inserted into the claims as a whole, however, we agree with the district court that the alternating semiconductor regions must physically touch the contact layer. It is with this result that PMT disagrees.

Working with the Special Master’s definitions, as it must after expressly agreeing with them, PMT attempts to explain how the “common boundary” requirement of “interface” and the “electrical or physical” definition of “contacting” can coexist when the claims are read as a whole. The “interface,” according to PMT, is present in the physical boundary between the voltage sustaining layer (here, the n-buffer layer) and the contact layer. The “contacting” requirement is also satisfied, PMT continues, by the electrical conduction that occurs between the CB-layer and the contact layer. Thus, according to PMT, both claim requirements may be satisfied without physical contact between the alternating semiconductor regions and the contact layer.

PMT’s urged claim construction relies heavily on statements made in the Special Master Report explaining that “the term is used throughout the claims to mean the common boundary between the ‘contact layer’ and the ‘voltage sustaining layer.’” Special Master Report at 36 (citing the ’275 patent, col. 7, l. 68 to col. 8, l. 5); see also id. at 36-37 (“Nevertheless, in the Chen patent, this interface is necessarily physical because it is a junction between two semiconductor layers, the contact layer and the voltage sustaining layer.”). PMT seizes upon the above descriptions of the “interface” to support its position that, regardless of what comprises the voltage sustaining layer, the required interface will always be between it and the contact layer. According to PMT, no interface is required between the CB-layer and the contact layer.

This, however, is not how we read the claims or the Special Master’s recommended construction of their terms. The Special Master appears to have been using “voltage sustaining layer” interchangeably with “CB-layer” in his discussion, as evidenced by his citations to the patent. For example, in the quotation set out above, the Special Master cites the ’275 patent at column 7, line 68, to column 8, line 5, which is the language from claim 11 at issue (i.e., “contacting with all the first and

second semiconductor regions to form [an] interface”). As we read the cited passage, the language specifically locates the interface between the contact layer and the alternating semiconductor regions of the CB-layer, not an undefined voltage sustaining layer. The Special Master further explained that “[g]iven the overall structure of the Chen MOS devices, [the contact and voltage sustaining] layers will touch each other,” and cited a passage from the ’275 patent describing the manufacture of the CB-layer on the surface of the contact layer. See Special Master Report at 36 (citing the ’275 patent, col. 5, ll. 52-58).

While the Special Master correctly acknowledged that the voltage sustaining layer was open to additional elements and layers due to the “comprising” term, Special Master Report at 32, his discussion of the “interface” is understandably confined to the structure actually described by the ’275 patent. See SRI Int’l v. Matsushita Elec. Corp., 775 F.2d 1107, 1118 (Fed. Cir. 1985) (en banc) (“A claim is construed in the light of the claim language, the other claims, the prior art, the prosecution history, and the specification, not in light of the accused device.”). Furthermore, because he did not attempt to construe the claims as a whole, the Special Master had no opportunity to reconcile the functional definition he adopted for “contacting” with his structural interpretation of “interface.” The district court, however, could not avoid the necessary reconciliation, and concluded that, when the Special Master’s construction of the individual terms are plugged into the remaining claim language, the claims require the interface to be between the alternating semiconductor regions of the CB-layer and the contact layer. Power Mosfet Techs., slip op. at 36-39, 78-79. We agree with the district court’s conclusion. While the “contacting” requirement may be satisfied with either physical or electrical contact, we do not see how electrical contact alone can form the “necessarily physical” junction required for the interface. “Comprising,” while permitting additional elements not required by a claim, does not remove the limitations that are present. See W.E. Hall v. Atlanta Corrugating, LLC, 370 F.3d 1343, 1353 (Fed. Cir. 2004) (explaining that each and every limitation of a claim must be satisfied before additional elements are examined under the partially open term “consisting essentially of”).

The written description lends additional support to this interpretation. The main discussion of the fabrication process in the ’275 patent describes: “(1) Epitaxial growth of an n<sup>-</sup> (or p<sup>-</sup>)-layer 5 on the

$n^+$  (or  $p^+$ )-substrate 4; (2) Selective trenching on 5 to make very deep U-grooves, where the bottoms of the grooves just reach 4 . . .” ’275 patent, col. 5, ll. 32-35 (emphasis added); see also id. at col. 5, ll. 52-55 (detailing the growth of an epi-layer “on the  $n^+$  (or  $p^+$ )-substrate” (i.e., the contact layer), to create a CB-layer according to the method described above (emphasis added)); id. at col. 2, ll. 1-4 (describing the arrangement of  $n$ - and  $p$ -regions when “viewed from any cross-section parallel to the interface between the CB-layer itself and the  $n^+$ -region”). Each of the figures in the ’275 patent depicts physical contact between the CB-layer and the contact layer and, where an intervening layer is permitted, the written description expressly provides for it. See id. at col. 6, ll. 37-39 (“From FIG. 4 to FIG. 9 the existence of dielectric films between 4 [the first contact layer] and 7 [the second semiconductor region], and/or between 6 [the first semiconductor region] and 7, if any, are allowed.”). To accommodate the interleaved dielectric film described by the written description, claim 1 of the ’275 patent omits the requirement of an interface between the first contact layer and the second semiconductor region. Id. at col. 6, ll. 41-60.

The term “directly,” which appears in two of the three independent claims of the ’275 patent, does not affect our conclusion. Claim 1 requires a “second contact layer contacting the first and second semiconductor regions directly forming a second interface.” Id. at col. 6, ll. 58-60 (emphasis added). Claim 14 has a similar requirement, also applying only to the second contact layer. Id. at col. 8, ll. 38-40. Claim 11, however, has no “directly” limitation, nor does the term append the “first interface” requirement in any of the claims. PMT states on appeal that this term is meaningless, while Infineon argues that “contacting . . . directly” means physically touching. Although he noted the argument, the Special Master did not address the issue. Special Master Report, slip op. at 24. The district court likewise did not specifically address the term, but, in light of its conclusion that “contacting . . . to form an interface” required physical contact, the import of “directly” was irrelevant.

While we have often explained that we presume that there is “a difference in meaning and scope when different words or phrases are used in separate claims,” the rule is not inflexible. Comark Communications. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting Tandon Corp. v. U.S. Int’l Trade Comm’n, 831 F.2d 1017, 1023 (Fed. Cir. 1987)). Furthermore, while interpretations that

render some portion of the claim language superfluous are disfavored, where neither the plain meaning nor the patent itself commands a difference in scope between two terms, they may be construed identically. See Pickholtz v. Rainbow Techs., Inc., 284 F.3d 1365, 1373 (Fed. Cir. 2002). Here, the addition of the term “directly” to an existing requirement of physical contact imposes no additional restrictions on the phrase. Whether the alternating semiconductor “contact[s] . . . directly to form a second interface,” or merely “contact[s] . . . to form a second interface,” a physical boundary must be formed.

In affirming the district court’s construction of “contacting . . . to form [an] interface,” we must also affirm the district court’s ultimate determination that neither the Infineon nor the ST products literally infringe the ’275 patent. The requirement is present in both of the independent claims asserted, and, as the district court found, is not met by either of the accused devices. Power Mosfet Techs., slip op. at 38-39, 78-79.

## 2. Denial of PMT’s Motion for a New Trial

PMT argues that the district court abused its discretion when the court denied its motion for a new trial. According to PMT, the district court adopted the recommended claim constructions of the Special Master at the outset of the trial but then, in authoring its final opinion, modified the adopted constructions in a manner that resulted in a finding of noninfringement. PMT claims that it relied on the district court’s early construction of the claims, and consequently presented no evidence on the issue of the doctrine of equivalents. Infineon responds that, contrary to PMT’s assertions, the claim constructions were not changed, but rather the interpretations of the individual terms provided by the Special Master were read in the context of the full claims. Furthermore, Infineon continues, even if the claim constructions were changed, nothing precludes a district court from making adjustments as a trial proceeds. ST reiterates Infineon’s first argument and adds that, as a result of PMT’s position at the Markman hearing that “contacting . . . directly” required physical contact—an issue not resolved by the Special Master—equivalents were very much at issue during the trial, rather than obviated as PMT maintains. As stated, the Fifth Circuit applies an abuse of discretion standard to the review of a district

court's grant or denial of a new trial, requiring a "clear showing" that an abuse occurred. Hidden Oaks v. City of Austin, 138 F.3d 1036, 1049 (5th Cir. 1998). The Fifth Circuit has further explained that district courts "do not grant new trials unless it is reasonably clear that prejudicial error has crept into the record or that substantial justice has not been done, and the burden of showing harmful error rests on the party seeking the new trial." Sibley, 184 F.3d at 487 (quoting Wright & Miller, 11 Federal Practice & Procedure § 2803, at 31-33 (3d ed. 1973)). Under this standard, we find that the district court did not abuse its discretion.

Although the Special Master provided recommended claim constructions following the Markman hearing, those recommendations construed only individual terms in the claims. The Special Master's limited construction left substantial ambiguity as to the meaning of the claims as a whole, particularly regarding the "contacting . . . to form [an] interface" limitation. This ambiguity did not go unnoticed by the parties as, following the issuance of the Special Master's report, PMT moved the district court for clarification of the Special Master Report and Infineon and ST responded with objections to the same.

On March 22, 2001, the district court held a hearing on the motions. At the hearing, PMT "request[ed] clarification on whether an interface encompasses both a 2-D surface and 3-D structures or areas." Tr. of Hearing on Plaintiff's Motion for Clarification and Defendants' Objections to Special Master's Report and Recommendations, at 15 (Mar. 22, 2001). ST, however, explained that it would be helpful if the court could give "a brief review of what interface means and how the Master has defined it to understand the notion of contacting to form an interface." Id. at 44. ST also asked the district court to modify the definition of "contacting" to require physical contact. Id. at 49. Infineon reiterated ST's objections, and further explained that "one of [its] objections to the Special Master's report is that it essentially was a list of definitions for five terms that, albeit while in dispute, did not provide the court with actual constructions as a whole." Id. at 57. Specific to the "contacting . . . to form [an] interface" limitation, Infineon asserted that "if the definition of contacting is read in combination with the explanation of interface as a two-dimensional object, not as a three-dimensional object as [PMT] would suggest," then "the claim language specifically calls for contacting two objects to form a third object,

which is the interface.” *Id.* at 62. In the order responding to the parties’ motions, the district court stated that it adopted the Special Master’s report “with the following supplementation and modification”:

The term “contacting” in independent claim 11 as in “contact layer contacting all said first semiconductor regions and said second semiconductor regions . . .” is defined as “permitting or enabling contact.” Claim 11 of the Chen patent is drawn generally to a semiconductor power device and covers several embodiments. One set of embodiments (e.g., Fig. 4) shows the contact layer touching the first and second semiconductor regions. But another embodiment (see Fig. 8) shows the contact layer being separated from the first and second semiconductor regions by other layer(s). Construing “contacting” as being restricted to physically touching would improperly read some embodiments into claim 11, and thereby, improperly limit its scope.

Claim Construction Order at 1-2.

The significance of the hearing and subsequent order are two-fold. First, from the arguments made, it is clear that all parties were aware of the ambiguity that remained in the litigation in connection with the “contacting . . . to form [an] interface” limitation. PMT’s argument for a three-dimensional interface can only be understood—and in fact was understood by Infineon—as the recognition of a possibility that the accused devices lacked the two-dimensional interface that might be required when the interpreted terms were read in the context of the full claims. ST’s objections expressly identified the ambiguity, and requested clarification. Second, the district court’s order addressed only ST’s and Infineon’s argument that the term “contacting” required physical contact, omitting any discussion of the ambiguity identified by the parties.

Following the hearing and order, therefore, the parties were no closer to having a full claim construction than they would have been had they gone to trial with only the Special Master Report. The district court did not resolve the ambiguity concerning the “contacting . . . to form [an] interface” limitation, but preserved it by adopting the Special Master’s recommendations without additional interpretation. We therefore must conclude that, while a construction of the claims as a whole would have been beneficial to the litigants, the district court’s failure to provide one rendered impossible the changed claim construction of which PMT complains. To the contrary, there was never a full claim construction provided by the district court prior to its decision, and none was required. See Markman v.

Westview Instruments, Inc., 52 F.3d 967, 981 (Fed. Cir. 1995) (en banc) (explaining that claim constructions can be announced “by the court in framing its charge to the jury, but may also be done in the context of dispositive motions such as those seeking judgment as a matter of law.), aff’d, 517 U.S. 370; Sofamor Danek Group v. Depuy-Motech, 74 F.3d 1216, 1221 (Fed. Cir. 1996) (“Markman does not obligate the trial judge to conclusively interpret claims at an early stage in a case.”). The terms “contacting” and “interface” were construed by the Special Master without construing the claims as a whole, and those constructions were then assembled into full claims and relied on by the district court in concluding that the “contacting . . . to form [an] interface” limitation of the claims was not satisfied by either Infineon’s CoolMOS or ST’s MDMesh products. [2]

That the claim constructions remained unsettled following the district court’s order is demonstrated by the subsequent events at trial. In response to an objection by PMT that Infineon was rearguing an issue decided by the Special Master’s claim constructions, the following dialogue took place:

Infineon: I would submit, your honor, respectfully, that your affirmation of the Special Master Report should be viewed at most as tentative. . . . But we have got to be able to put before this court what we believe to be evidence and argument that clearly establish . . . that what the Special Master did in this case . . . is clearly wrong.

Court: Very well. Mr. Shore [counsel for PMT].

PMT: Then what he is doing is asking for extrinsic evidence on Markman which is prohibited under the rules of claim construction.

Court: I will allow the question and again address this at the conclusion of the case.

(J.A. at 102148). In reversed roles, Infineon later objected that PMT was attempting to reargue claim construction, to which the district court responded “I recall Mr. Neuner [counsel for Infineon] saying it was never final until I entered a final judgment,” a recollection emphatically seconded by PMT’s counsel. (J.A. at 110210). We gather from these discussions that both the parties and the court viewed the claim constructions performed by the Special Master as preliminary, subject to modification by the district court, with each side continuing to press throughout the trial for more favorable interpretations.

In addition to acknowledging and availing itself of the unsettled nature of the constructions recommended by the Special Master, PMT made several arguments during trial falling squarely within the ambiguity it now maintains did not exist after the district court's adoption of the Special Master's report. During PMT's examination of Dr. Richard Fair, of one its expert witnesses, counsel for PMT inquired:

I want to ask you a little bit about an alternate argument that has been made. . . . The argument has been made that for the P-columns to contact and form this interface, they have to go all the way down and touch the  $n^+$  substrate. Are you familiar with that argument?

Tr. of Bench Trial, vol. 1, at 106 (Aug. 27, 2001). Upon an affirmative response by Dr. Fair, counsel proceeded to elicit testimony—without objection from ST or Infineon—as to why that interpretation was incorrect. *Id.* at 107. Finally, later in the proceedings, PMT refused Infineon's request to stipulate that “directly contacting” meant touching, stating “[t]hat's for the court to determine.” (J.A. at 104176).

As the foregoing excerpts make clear, PMT was aware that the claim constructions for the '275 patent were incomplete and would be finalized by the district court at some later date. PMT continued to argue at trial against constructions unfavorable to its position, including the position that physical contact was required between the first and second semiconductor regions of the CB-layer and the contact layer. PMT's refusal to stipulate to the meaning of “directly contacting” expressly acknowledged that the district court had not yet resolved whether that phrase required physical contact and consequently, as Infineon points out, a physical touching requirement remained a possibility until the district court construed the claims in full. The situation in this case resembles that present in our decision in Exxon Chemical Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553 (Fed. Cir. 1995). In Exxon Chemical, this court reversed a jury finding of infringement after concluding that the district court incorrectly construed the claims of the patent at issue. *Id.* at 1555. The court did not remand for further proceedings, but instead queried whether, based on the evidence presented at trial, “any jury could reasonably have found that Lubrizol's accused products literally infringe the claims of the [patent at issue] as properly construed.” *Id.* at 1559. Concluding that it could not, the court reversed and entered judgment of noninfringement as a matter of law. *Id.* at 1560. In justifying its action, the court

explained:

We have emphasized that Exxon's error was in failure of proof as to the claimed amounts, without which it could not prove infringement under Lubrizol's claim meaning. The trial judge did not interpret the claims until all the evidence was in, just before the case was submitted to the jury. Exxon—knowing Lubrizol's defense—knew that it would lose on Lubrizol's claim meaning unless it could show the presence of the claimed ingredients in the claimed amounts in some Lubrizol product. Exxon was free to choose the moment at which it would identify with proof that a Lubrizol product infringed. Thus, Exxon could have argued and sought to prove that ashless dispersant is present in the claimed percentages, along with the other claimed ingredients in their specified amounts, at any time from the moment of creation of Lubrizol's product. Exxon cannot now claim surprise from our variation on Lubrizol's claim meaning and cry foul in not having a second chance to prove what it was free to prove at trial.

Id. at 1560-61.

Similar to Exxon Chemical, PMT was on notice that Infineon's and ST's argued claim construction required physical contact between the alternating semiconductor regions and the contact layers. The record reveals both an incomplete claim construction containing a significant ambiguity and an awareness by the parties that the limited constructions that did exist were subject to further modification by the district court. Nevertheless, PMT chose not to present evidence on the doctrine of equivalents. While the Claim Construction Order adopting the Special Master Report does appear to favor PMT's preferred claim construction, the bias was apparently not so great as to cause PMT to abandon its arguments against its opponents' claim construction positions at trial. Consequently, PMT "cannot now claim surprise" at the district court's final resolution of the claims in a manner unfavorable to it, id. at 1561, nor can we say that the district court abused its discretion in denying PMT's motion for a new trial.

Having affirmed both the district court's final claim constructions, and its denial of PMT's motion for a new trial, we also affirm its judgment of noninfringement. As a result, we do not reach PMT's remaining arguments. Likewise, we do not reach Infineon's and ST's arguments regarding the invalidity of the '275 patent, as they are premised on a change in claim construction that we do not address.[3]

### 3. Infineon's Cross-Appeal for Attorney Fees

Infineon asserts that it should have been awarded its attorney fees, arguing that such fees were warranted under both Rule 11 and 28 U.S.C. § 285. According to Infineon, the district court did not address its request for sanctions under Rule 11 or make findings of fact as to the exceptionality of the case. As PMT points out, however, the district court chastised all of the parties to the litigation for inappropriate behavior during the proceedings, stating that “looking back at the parties’ overall conduct, it sometimes seemed that they thought themselves to be in a totally different universe, a Wonderland where up was down and down was up and none of the normal rules applied.” Power Mosfet Techs. v. Siemens AG, No 2:99-CV-168, at 3 (Sept. 30, 2002) (order denying motions for sanctions). The court further explained that, although all of the parties had engaged in questionable behavior, “none of the misconduct [rose] to a level that would warrant significant sanctions to be awarded against any party, especially as such an award would tend to reward other wrongdoers in this case.” Id. The court warned the parties that it would not be so lenient in future litigation in which they were involved.

While the language the district court used in denying sanctions is general in nature and does not specifically address Infineon’s sanction motion, its tone makes its message perfectly clear: it was not awarding sanctions because all of the parties had conducted themselves without the decorum required when practicing before a federal court. The district court acknowledged the withholding of documents and other discovery abuses, as well as a variety of misconduct during the litigation, and credited each of the parties with some share of the bad behavior. In the face of the district court’s warning to all of the parties, Infineon is quite bold to now assert that the district court abused its discretion in denying sanctions and fees.

We need not address the facts underlying Infineon’s Rule 11 or section 285 motions, however, as we conclude that the district court’s finding of widespread misconduct among all of the parties, Infineon included, is a more than adequate justification for an exercise of discretion denying sanctions. Cf. View Eng’g, Inc. v. Robotic Vision Sys., 208 F.3d 981, 986 (Fed. Cir. 2000) (explaining that, under an identical standard in the 9th Circuit, a plaintiff’s failure to investigate its charges of infringement prior to suit “should ordinarily result in the district court expressing its broad discretion in favor of Rule 11 sanctions, at least in the absence of a sound excuse or considerable mitigating circumstances.” (emphasis

added)); Read Corp. v. Portec, Inc., 970 F.2d 816, 831 (Fed. Cir. 1992) (“When the attorney fees under 35 U.S.C. § 285 are awarded solely on the basis of litigation misconduct, the amount of the award must bear some relation to the extent of the misconduct.”). View Engineering and Read reflect the principle that an award of sanctions under Rule 11 and attorney fees under section 285 should be tailored by a court to the situation before it. A party subjected to behavior warranting an award of sanctions or fees might justifiably be denied those fees in a district court’s discretion for the behavior to which it subjected others. Having found exactly those circumstances here, the district court did not abuse its discretion in declining to award Infineon its fees.

#### 4. IR’s Cross-Appeal for Costs as the Prevailing Party

As the final point that must be addressed, IR argues that it is entitled to its costs under Federal Rule of Civil Procedure 54(d)(1), which states that costs shall be awarded to the prevailing party “as of course.” Since a party dismissed with prejudice is a prevailing party, IR continues, it is entitled to its costs in the absence of an explanation by the district court justifying its denial.

The district court found that IR was not a prevailing party for purposes of Rule 54. The dismissal of a claim with prejudice, however, is a judgment on the merits under the law of the Federal Circuit. Hallco Mfg. Co. v. Foster, 256 F.3d 1290, 1297 (Fed. Cir. 2001).[4] As this court has explained, whether a party is “prevailing” for the purposes of Rule 54 is a matter of federal circuit law. Manildra Milling, 76 F.3d at 1182. And, as we have further explained, “[i]n those cases in which one party wins completely on every claim at issue, determining which party has prevailed is a straightforward task.” Id. IR, which had all claims against it dismissed with prejudice, is therefore a prevailing party.

Even concluding that IR is a prevailing party, the district court still retains discretion over the award of costs under Rule 54. The Fifth Circuit, however, whose law governs this aspect of our review, applies a strong presumption that costs will be awarded. Schwarz, 767 F.2d at 131. Where a district court has provided no reason for a denial of costs, the Fifth Circuit has remanded for further explanation by the district court. Id.; see also Walters v. Roadway Express, Inc., 557 F.2d 521, 526-27 (5th Cir.

1977). In the event that IR was a prevailing party, the district court explained that “[b]y certifying that they would not file any opposition, the IR defendants showed the Court that while the motion was not agreed, there was an agreement between the parties concerning dismissal,” and that the agreement was the reason that it was denying costs.

IR responds to the district court’s justification by pointing out that the “Certificate of Conference” relied on by the district court is a requirement of the local rules for the Eastern District of Texas and, as a required filing, should not be construed as an agreement between the parties.<sup>[5]</sup> According to IR, therefore, it was merely complying with the Eastern District’s local rules, and its compliance cannot also act as a basis for overcoming the presumption in favor of fees applied by the Fifth Circuit. We note, however, that Local Rule CV-7(h) imposes its requirements on only the party filing the motion. Furthermore, as IR itself points out in its brief, a district court has no choice but to grant a dismissal with prejudice if one is requested by a plaintiff. (Br. for Cross-Appellant IR at 18 n.4 (quoting Schwarz, 767 F.2d at 129-30 n.5)). IR’s representations to the court, therefore, including its invitation for the court to “act on this Motion without delay,” were not required under the local rules or otherwise.

Viewed from the position of the district court, IR, although it maintained that it was not joining the motion, stated that it would not file any opposition, did not raise the issue of costs, and encouraged the district court to grant the order without delay. These representations were contained in the Certificate of Conference, which, along with a copy of the order to be entered by the district court—also lacking any mention of costs—were reviewed by IR and the Certificate signed prior to PMT’s filing of the motion with the district court. In light of the needlessness of IR’s representations to the district court, we cannot conclude that the district court abused its discretion in viewing the situation as an agreement between the parties regarding dismissal, and therefore denying costs.

### III. CONCLUSION

Because we affirm the district court’s claim construction, we must also agree with its conclusion that neither Infineon’s nor ST’s accused devices infringe the ’275 patent. We also find that, because a

full construction of the claims was never completed prior to the district court's final judgment, the district court could not have changed the claim construction and therefore did not abuse its discretion in denying PMT's new trial motion. Regarding Infineon's cross-appeal, we conclude that the district court did not abuse its discretion in denying Infineon's costs under either Rule 11 or 35 U.S.C. § 285. Finally, we find that, in light of IR's representations to the district court, the district court did not abuse its discretion in denying IR's motion for costs under Rule 54(d). Accordingly, the district court's judgment of noninfringement, its denial of PMT's motion for a new trial, and its denial of Infineon's requests for fees and IR's request for costs are all

AFFIRMED.

#### IV. COSTS

No costs.

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[1] Claim 14 differs from claim 11 only in that it does not have a non-uniformity requirement for the doping concentrations in the n- and p-regions, and further requires a hexagonal layout for the alternating semiconductor region of the invention. '275 patent, col. 8, ll. 26-51. Claims 12 and 13 depend from claim 11, while claim 16 depends from claim 14.

[2] We additionally note that the explanation provided by the district court in the Claim Construction Order appears to be incorrect. The district court's reference to Fig. 8 as showing the contact layer "separated from the first and second semiconductor regions by other layer(s)" reflects a misunderstanding of what region is the contact layer in that figure. As ST explains, region 9, not region 11, is the contact layer in that figure. (Br. for Cross-Appellant ST, at 52 n.15). PMT also implicitly concedes that the district court's interpretation was in error by explaining that the contact layer does not touch "except at the geometrically infinitely small corners . . ." (Br. for Appellant, at 50 n.16). Touching at the "geometrically infinitely small corners," as PMT states, and "separated from the first and second semiconductor region by other layer(s)," as the district court found, are not the same. While we acknowledge that the error in the district court's order is inconsistent with its final resolution of the case, as our subsequent discussion makes clear, the error did not infect the district court's ultimate resolution of the case.

[3] Infineon and ST have each argued that, if this court adopts PMT's interpretation of the term "non-uniform," we must find the '275 patent invalid as anticipated. (Br. for Cross-Appellant Infineon, at 59; Br. for Cross-Appellant ST, at 62). Their arguments, however, are conditioned on our acceptance of PMT's interpretation of non-uniform. Neither Infineon nor ST wish to challenge the district court's invalidity determination in the absence of such an occurrence. Having disposed of PMT's appeal with the "contacting . . . to form [an] interface" limitation present in all of the claims, we do not reach PMT's additional arguments regarding the "non-uniform" limitation and, therefore, Infineon's and ST's conditional cross-appeal.

The Supreme Court's decision in Cardinal Chemical Co. v. Morton International Inc., 508 U.S. 83 (1993), does not require more. ST and Infineon have chosen to appeal only if we accept PMT's argument regarding "non-uniform"—they have not themselves challenged the district court's construction of the term. We are left with a situation where, effectively, the district court's findings regarding the invalidity of the '275 patent have not been appealed, not a situation like Cardinal Chemical where a party's request for review of the invalidity determination remains a live issue in the appeal. As is true of unappealed issues in any case, therefore, we express no opinion on the district court's validity determination.

We further note that, although conditional, Infineon's and ST's cross-appeals are properly before us. Unlike the situation in Bailey v. Dart Container Corp., Infineon and ST seek to "lessen the rights of its adversary under the judgment" rather than simply asserting additional grounds in support. 292 F.3d 1360, 1362 (Fed. Cir. 2002). The conditional nature of the cross-appeals in this case, therefore, does not implicate the concerns at issue in Bailey, where the arguments contained in the cross-appeal could have properly been advanced by the parties as appellees without the need for expanded briefing. Here, the argument against the district court's invalidity determination could not have been made if a cross-appeal had not been filed, as acceptance of the argument would result in a modification of the district court's judgment. See Typeright Keyboard Corp. v. Microsoft Corp., 374 F.3d 1151, \_\_ & n.4 (Fed. Cir. 2004) (explaining that while a party's rights under a judgment of validity are broader than under a judgment of noninfringement, the reverse is not true). The fact that the cross-appeal was conditional does not alone render it improper. See Ericsson, Inc. v. Harris Corp., 352 F.3d 1369, 1376 (Fed. Cir. 2003).

[4] Although this issue is a matter of Federal Circuit law, we note that the rule does not differ in the Fifth Circuit. See Schwarz, 767 F.2d at 129 ("Dismissal of an action with prejudice is a complete adjudication of the issues presented by the pleadings and is a bar to a further action between the parties." (quoting Smoot v. Fox, 340 F.2d 301, 303 (6th Cir. 1964))).

[5] Local Rule CV-7(h) of the Eastern District of Texas states:

Except as specified below, all motions must be accompanied by a "certificate of conference" at the end of the motion following the certificate of service. The certificate must state (1) that counsel has conferred with opposing counsel in a good faith attempt to resolve the matter without court intervention, and (2) whether the motion is opposed or unopposed.