

**UNITED STATES DISTRICT COURT  
DISTRICT OF MINNESOTA**

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AUGUST TECHNOLOGY CORPORATION,  
and RUDOLPH TECHNOLOGIES, INC.,

Plaintiffs,

v.

**MEMORANDUM OF LAW & ORDER**  
Civil File No. 05-1396 (MJD/AJB)

CAMTEK LTD,

Defendant.

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Christopher D. Newkirk, Arthur, Chapman, Kettering, Smetak & Pikala, P.A.,  
counsel for plaintiffs.

Ernest Grumbles, Merchant & Gould, counsel for defendant.

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**I. INTRODUCTION**

On March 5, 2009, a jury returned a special verdict finding that Camtek Ltd.'s Falcon device literally infringed claim 1 of Plaintiffs' U.S. Patent No. 6,826,298 ("the '6,298 patent") and that Camtek literally infringed Claim 3 of the '6,298 patent. The jury found that Plaintiffs August Technology Corporation and Rudolph Technologies, Inc. (collectively "August") failed to prove willful infringement by clear and convincing evidence. The jury also found that Camtek

failed to prove by clear and convincing evidence that claims 1 and 3 were obvious. In addition, the jury found that Camtek failed to prove by clear and convincing evidence that August's NSX-80 device was on sale prior to July 15, 1997. Lastly, the jury awarded August \$6,782,490 in lost profits damages.

On August 25, 2009, this Court considered and ruled on three post-trial motions: two motions for judgment as a matter of law ("JMOL") from Camtek and a motion to dismiss Camtek's inequitable conduct defense and counterclaim from August. The Court denied Camtek's motions and granted August's motion.

This matter comes before the Court on six post-trial motions: three motions for judgment as a matter of law ("JMOL") from Camtek [Docket Nos. 551, 556, & 561], a motion to stay judgment from Camtek [Docket No. 566], a motion to clarify judgment from Camtek [Docket No. 601], and a motion for attorney fees from August [Docket No. 572]. For the following reasons, the Court denies all of these motions.

## **II. DISCUSSION OF MOTIONS FOR JMOL AND NEW TRIAL**

### **A. Legal Standard for JMOL and New Trial**

Federal Rule of Civil Procedure 50(b) states that, when ruling on a renewed JMOL, "the court may: (1) allow judgment on the verdict, if the jury

returned a verdict; (2) order a new trial; or (3) direct the entry of judgment as a matter of law.” In patent cases, a motion for JMOL pursuant to Rule 50(b) is reviewed under the law of the regional circuit. Exergen Corp. v. Wal-Mart Stores, Inc., 575 F.3d 1312, 1317 (Fed. Cir. 2009). Under Eighth Circuit law, to enter JMOL against a jury verdict, the district court must assess “whether there is sufficient evidence to support the jury’s verdict.” White v. Pence, 961 F.2d 776, 779 (8th Cir. 1992). The court must “view the evidence in the light most favorable to the prevailing party and must not engage in a weighing or evaluation of the evidence or consider questions of credibility.” Employers Mut. Cas. Co. v. Collins & Aikman Floorcoverings, Inc., 422 F.3d 776, 779 (8th Cir. 2005) (quotations omitted). “A grant of judgment as a matter of law is proper only if the evidence viewed according to these standards would not permit reasonable jurors to differ as to the conclusions that could be drawn.” Id. (quotations omitted).

The standards for considering a motion for JMOL differ from the considerations behind a motion for new trial. Dominium Mgmt. Servs., Inc. v. Nationwide Hous. Group, 195 F.3d 358, 366 (8th Cir. 1999) (citations omitted). “In passing on a motion for a new trial premised on the weight of the evidence, the district court may rely on its own reading of the evidence and grant a new

trial even where substantial evidence exists to support the verdict.” Id.

“Ultimately, the district court must determine if there will be a miscarriage of justice if the jury’s verdict is allowed to stand.” Id. “The district court’s discretion is not boundless however.” White, 961 F.2d at 780. “[It] is not free to reweigh the evidence and set aside the jury verdict merely because the jury could have drawn different inferences or conclusions or because judges feel that other results are more reasonable.” Id. (quotation omitted). “[T]he ‘trial judge may not usurp the functions of a jury ... [which] weighs the evidence and credibility of witnesses.’” Id. (quoting Mcgee v. S. Pemiscot Sch. Dist., 712 F.2d 339 (8th Cir. 1983)). “Where the subject matter of the litigation is simple; where there exists no complicated evidence or where the legal principles presented are such that they would not confuse the jury, the court should be reluctant to grant a new trial.” Fireman’s Fund Ins. Co. v. Aalco Wrecking Co., 466 F.2d 179, 187 (8th Cir. 1972).

## **B. Literal Infringement**

Camtek seeks a JMOL that no competent evidence provided at trial justified the jury’s verdict of literal infringement on claims 1 and 3 of the ‘6,298 patent. Infringement analysis is a two-step process:

First, the court determines the scope and meaning of the patent claims asserted ... [and secondly,] the properly construed claims are compared to the allegedly infringing device. Step one, claim construction, is a question of law ... Step two, comparison of the claims to the accused device, is a question of fact, and requires a determination that every claim limitation or its equivalent be found in the accused device.

N. Am. Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d 1335, 1344 (Fed Cir. 2005).

Camtek provides three bases for its conclusion that the evidence failed to prove literal infringement. First, Camtek argues that no reasonable jury could have found literal infringement of the plurality of wafers and multiple wafers claim limitations. Second, Camtek argues that no reasonable jury could have found literal infringement of the “model wafer” claim limitations. Finally, Camtek argues that no reasonable jury could have found literal infringement of the “based on velocity” and “correlating to velocity” claim limitations. The Court considers each of these arguments separately.

### **1. Plurality of Wafers and Multiple Wafers Claim Limitations**

Camtek argues that no reasonable jury could have found that the Falcon literally infringed the “plurality of wafers” limitation of claim 1 and the “multiple wafers” limitation of claim 3 of the ‘6,298 patent. To support this

position, Camtek states that claims 1 and 3 require that more than one wafer be visually inputted or optically viewed during training, but that the Falcon machines visually input only multiple dies on a single wafer during training.

When defining the term “wafer” in its claim construction order [Doc. No. 268], however, the Court held that a “wafer should be construed to include a part of a wafer.” (Order at 10, Jan. 2, 2008.) In response to Camtek’s argument that the Court would be giving the same meaning to the terms “wafer” and “die,” the Court held that “[a] wafer ... is made up of multiple die, as is a portion of a wafer.” (Id. at 11.) “Thus, Plaintiffs’ construction of wafer does not provide the same meaning as die – the former refers to plural, while the latter refers to single.” (Id.) In conjunction with this definition, the Court instructed the jury as follows: “Wafer - A thin slice of semiconductor material with circuitry thereon that is ready for electrical testing, or any part thereof. However, a ‘wafer’ is not the same as a ‘die.’ A wafer is made up of multiple die.” Jury Instruction No. 12. As a result, the Court has plainly defined the term “wafer” to also refer to any part of a whole wafer other than a single die. It intended this construction because the patent itself describes an embodiment wherein training is performed by visual inspection of multiple die on a wafer, without indicating that the

training die must come from multiple whole wafers. (Pls.' Trial Ex. 1, FIG. 3; col. 7, ll. 21-27.)

At trial, August presented evidence that the Falcon visually inputs sections of multiple die from different parts of a whole wafer. (Trial Tr. 635:25-638:16.) In fact, the Falcon user manual states, “[t]his process requires you to select, at a minimum, seven dice though we prefer that you select somewhere between 10 and 20 dice.” Accordingly, the Court’s definition of the term “wafer” could refer to each of the sections of multiple die visually inputted by the Falcon. Therefore, the Court finds sufficient evidence to support the jury’s conclusion that the Falcon literally infringed the “plurality of wafers” limitation of claim 1 and the “multiple wafers” limitation of claim 3.

## **2. Model Wafer Claim Limitations**

Camtek argues next that no reasonable jury could have found that the Falcon literally infringed the “model wafer” limitation of claims 1 and 3 of the ‘6,298 patent. Specifically, Camtek asserts that the Falcon creates a model die, as opposed to a model wafer, and that the model die is compared to other dies during inspection, not other wafers.

At trial, however, August offered sufficient evidence of the Falcon’s wafer mapping process to support the jury’s finding of literal infringement on the

“model wafer” limitation of claims 1 and 3 of the ‘6,298 patent. (See, e.g., Trial Tr. at 635:25-639:16; Trial Tr. at 1471:19-1472:9; Trial Tr. at 1483:23-1484:1; Trial Tr. at 2339:11-16.) According to the evidence presented, the Falcon creates a wafer map that models where the die should be located on a wafer. (See Trial Tr. at 635:25-638:16; Trial Tr. at 1469:17-24.) August argued that the model die combined with the wafer map essentially created a model wafer with all of the necessary characteristics to inspect an unknown quality wafer. (Trial Tr. at 2743:16-19.) Further, August relied on Camtek’s own expert, Dr. Mellor, who testified that with the model of the dies and the wafer map, the Falcon has the information it needs to inspect a wafer. (See Trial Tr. 2339:17-2340:1.) Finally, August pointed out that Camtek marketed the Falcon as precisely a wafer inspection machine. (See Pl.’s Trial Ex. 65.) Based on the exhibits and testimony presented at trial, the Court finds sufficient evidence to support the jury’s conclusion that the Falcon could have literally infringed the “model wafer” limitation of claims 1 and 3.

### **3. Based on Velocity and Correlating to Velocity Claim Limitations**

Finally, Camtek argues that no reasonable jury could have found that the Falcon literally infringed the “based on velocity” limitation of claim 1 and



“correlated to velocity” limitation of claim 3 of the ‘6,298 patent. Specifically, Camtek asserts that the Falcon uses a position-based method of strobing a light to capture still images of moving wafers, as opposed to a velocity-based system.

In its claim construction order [Doc. No. 268] and Jury Instruction 12, the Court stated that strobing “based on velocity” referred to in claim 1 means “[w]hen the illuminator strobe[] depends, in part, on the rate of change of the position of the wafer such that the illuminator freezes the patterns of the moving wafer onto the visual inspection device.” (Order at 14-19, Jan. 2, 2008; see also Jury Instruction 12.) The Court’s construction does not allow “strobing based solely on position, or some other factor.” (Id.) According to this construction, if evidence establishes that strobing depends on velocity, it does not matter whether strobing also depends on position. (See id.)

In its claim construction order and Jury Instruction 12, the Court stated that strobing “correlated to a velocity” referred to in claim 3 means “[w]hen the illuminator flashes on and off relates to the rate of change of position of the ‘wafer’, such that the illuminator freezes the patterns of the moving ‘wafer’ onto the visual inspection device.” (Id.) Thus, the Court held that “claim 3 requires that the flashing on and off of the illuminator has a relationship to the velocity of the wafer.” (Id.) The Court specifically held that “Plaintiffs did not disclaim

during the prosecution of the '6,298 patent strobing or flashing based on position." (Id.)

At trial, August provided substantial evidence showing that the Falcon utilized velocity-based strobing and that the flashing on and off of the illuminator was correlated to a velocity of the wafer. (See, e.g., Pls.' Trial Ex. 70; Pls.' Trial Ex. 765; Pls.' Trial Ex. 766, Pls.' Trial Ex. 770 Trial Tr. at 586:6-15; Trial Tr. at 609:18-21 Trial Tr. at 649:21-652:16; Trial Tr. at 689: 8-690:5; Trial Tr. at 1501:5-15; Trial Tr. at 1505:8-17; Trial Tr. at 1653:24-1654:9; Trial Tr. at 2344:10-15; Trial Tr. at 2404:24-2405:12; Trial Tr. at 2409:1-24.) Accordingly, based on the Court's claim construction and the exhibits and testimony presented at trial, the Court finds sufficient evidence to support the jury's conclusion that the Falcon could have literally infringed the "based on velocity" limitation of claim 1 and the "correlated to a velocity" limitation of claim 3.

Because the Court finds sufficient evidence supporting each of Camtek's three non-infringement contentions, the Court denies Camtek's Motion for JMOL as to infringement. Furthermore, based on the Court's evaluation of the evidence presented at trial, it determines that there would be no miscarriage of justice if the jury's verdict is allowed to stand. As a result, the Court also denies Camtek's request for a new trial on literal infringement.

### **C. Lost Profits.**

Camtek contends that the jury's award of \$6,782,490 in lost profits is not supported by substantial evidence because there were more than two suppliers in the wafer inspection industry during the relevant period. It claims that August ignored overwhelming evidence of competitors other than Camtek when asserting its "two-supplier market" theory of lost profits and that, had the Falcon machines not been on the market, Camtek's customers would have opted for products from suppliers other than August.

#### **1. Lost Profits**

In order to obtain lost profits, a patentee must establish that the lost sales would not have occurred but for the infringement of the defendant. Ericsson, Inc. v. Harris Corp., 352 F.3d 1369, 1377 (Fed Cir. 2003). Such but-for causation can be proven directly, or through the existence of a "two-supplier" market theory or a market share theory. Id. Under a two-supplier market theory of lost profits, the patentee is awarded lost profits on all of the infringer's sales because the customer would not have purchased from anyone else. State Indus. Inc. v. Mor-Flo Indus. Inc., 883 F.2d 1573, 1578 (Fed Cir. 1989). Under the market share theory, a patentee need not demonstrate the absence of non-infringing

alternatives to recover its lost profits. Id. Instead, a patentee is entitled to its lost profits based on its market share. Id.

The jury instructions at trial reflected these various paths to recovery for lost damages. Specifically, the jury was instructed that for lost profits, August could show “but for the infringement August would have made profits” or “that August would have sold its inspection machines to some or all of the customers who purchased the Falcon had the Falcon not been available.” (Jury Instructions 44). The Court instructed the jury that to find lost profits in a two-supplier market, “you must consider whether non-infringing substitutes existed that were acceptable to the specific purchasers of the infringing products, not ‘purchasers’ generally.” (Id. at 45, 47-48.) Finally, the jury instructions also allowed the jury to award lost profits based on a market share theory. (Id. at 51.)

At trial, August presented evidence supporting the lost profits award ultimately given by the jury. (See e.g., Pls.’ Trial Exs. 104, 110, 121, 168, 180, 121, 168, 180, 239, 471, 475, 476, 492, 494, 495, 498, 499, 502, 511, 516, 521, 557-559, 563, 570, 575; Trial Tr. at 361:12-17, 364:13-23, 362:13-21, 448:24-449:22, 529:19-530:13, 815:1-8:16:19, 529:19-530:13, 829:24-889:7, 890:10-912:22, 938:3-11, 941:14-19, 956:1-25, 982:19-983:13, 986:25-987:2, 995:7-10, 997:11-1003:14, 1004:6-1006:2, 1010:24-1037:10, 1189:16-18, 1198:2-1199:22, 1200:18-1201:18, 1630:21-1632:2, 1726:23-

1727:1, 1744:17-23, 1776:11-1777:21, 1784:13-1785:2.) First, August presented evidence showing that, but for Camtek's infringement, there is a reasonable probability that August would have made the infringing sales. Second, August presented evidence indicating that it would have made the sales because the market is a two-supplier market. Finally, August presented evidence showing that, even if it was not a two-supplier market, August held at least 60% of the market share. In this case, the lost profits award equates to less than 100% of Camtek's sales. Based on the exhibits and testimony presented at trial, the Court finds sufficient evidence to support the jury's award of lost profits in the amount of \$6,782,490 to August. The Court therefore denies Camtek's Motion for JMOL regarding lost profits.

## **2. New Trial or Remittitur Regarding Reasonable Royalty**

Camtek also requests a new trial or remittitur regarding a reasonable royalty owed to August as a result of the infringement. "[A] district court should order remittitur only when the verdict is so grossly excessive as to shock the conscience of the court. A verdict is not considered excessive unless there is plain injustice or a monstrous or shocking result." Eich v. Bd. of Regents for Cent. Mo. State Univ., 350 F.3d 752, 763 (8th Cir. 2003) (citations omitted).

Because the Court has already determined that the jury's award of damages is

supported by evidence produced at trial, it declines to remit damages or order a new trial on the issue of a reasonable royalty. As a result, the Court denies Camtek's request for a new trial or remittitur on the issue of damages.

#### **D. Obviousness**

Next, Camtek seeks JMOL that claims 1 and 3 of the '6,298 patent are invalid for obviousness under 35 U.S.C. § 103 and, in the alternative, requests a new trial on obviousness. Camtek argues that the Chau prior art patent – which was not considered by the Patent Examiner during prosecution of the '6,298 patent – discloses an automated wafer inspection system that includes all but the strobing light limitations of claims 1 and 3 of the '6,298 patent. (See Def.'s Trial Ex. 295.) According to Camtek, this limitation is described in detail in the Moriya patent, which was also not considered by the Patent Examiner during prosecution of the '6,298 patent. (See Def.'s Trial Ex. 290.) As a result, Camtek argues that one of ordinary skill in the art would find that this prior art rendered August's '6,298 patent obvious.

An invention cannot be patented if “the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a);

see also KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007). Nevertheless patents are presumed to be valid, and

[a] party seeking to invalidate a patent based on obviousness must demonstrate 'by clear and convincing evidence that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.

Proctor & Gamble Co. v. Teva Pharma. USA, Inc., 566 F.3d 989, 994 (Fed. Cir. 2009) (quotations omitted).

"The obviousness determination turns on underlying factual inquiries involving: (1) the scope and content of prior art, (2) differences between claims and prior art, (3) the level of ordinary skill in the pertinent art, and (4) secondary considerations such as commercial success and satisfaction of a long-felt need." Id. (citing Graham v. John Deere Co., 383 U.S. 1, 17 (1966)); see also KSR, 550 U.S. at 406-07. The United States Supreme Court has also explained that the Federal Circuit's "teaching, suggestion or motivation" test provides helpful insight into obviousness as long as it is not rigidly applied. See KSR, 550 U.S. at 406.

In this case, the jury found that Camtek failed to prove by clear and convincing evidence that the '4,628 patent was invalid for obviousness. Although obviousness is a question of law, the Court is not free to simply

disregard the jury's findings of fact. See *Hearing Components Inc. v. Shure Inc.*, 600 F.3d 1357, 1373 (Fed. Cir. 2010) ("We review the jury's conclusions on obviousness, a question of law, without deference, and the underlying findings of fact, whether explicit or implicit within the verdict, for substantial evidence.").

The Court presided over this trial wherein the parties submitted evidence on the issue of obviousness. Upon review of the testimony and exhibits offered with regard to the Chau and Moriya patents, the Court determines that it was reasonable for the jury to find that Camtek failed to prove obviousness by clear and convincing evidence. Specifically, the Court finds that the evidence presented was sufficient to show that the cited art failed to teach the claim element of strobing to freeze a pattern on a moving wafer and that a person of ordinary skill in the art would not have found it obvious to combine the Chau and Moriya prior art to obtain the '6,298 patent. (See e.g., Pls. Trial Exs. 370, 799; Trial Tr. at 308:4-20, 311:21-312:17, 327:4-19, 331:1-334:8, 341:2-343:13, 367:8, 516:12-517:24, 919:11-15, 921:13-16, 985:17-20, 997:11-1003:14, 1046:15-19, 1194:8-11, 1556:21-22, 1634:4-11, 1637:6-17, 1640:2-23, 1643:10-19, 1652:3-5, 1959:21-1960:10, 2071:5-14, 2081:20-2083:11-16, 2085:16-2087:7, 2091:16-25, 2437:5-8, 2440:7-14, 2441:11-2443:18, 2445:22-2446:17, 2447:17-2458:14.) Accordingly, the Court denies Camtek's request for JMOL as to invalidity. Furthermore, the



Court determines that there would be no miscarriage of justice if the jury's verdict is allowed to stand. As a result, the Court also denies Camtek's request for a new trial on obviousness.

**E. Camtek's Rule 60 Motion for Clarification of the Order on Final Judgment and Injunctive Relief.**

Camtek also requests that the Court to modify its Order on Final Judgment and Injunctive Relief [Docket No. 547] on the grounds that paragraphs 5(a) and 5(b) of the Order provide inconsistent guidance to Camtek on how to conduct its business operations under the Order.

The Court has reviewed the disputed provisions and has determined that they are indeed consistent. Paragraphs 5(a) and 5(b) enjoin Camtek from:

- a. communicating with third parties (in person, via phone, via email or by any other means) located in the United States for the purposes of offering to sell Falcon machines or machines that are colorable imitations thereof, notwithstanding where the third party intends to use the machines;
- b. advertising or marketing the Falcon machines or machines that are colorable imitations thereof in the United States unless it is made clear on the marketing or advertisements that Camtek's Falcon machines or machines that are colorable imitations thereof are not for sale or use in the United States.

(Order at 8, Aug. 28, 2009.) The Order explains exactly what an offer for sale is:

An offer for sale is any communication – such as an advertisement, brochure, price quotation, product manual, webpage, verbal offer for

sale, or the like – that contains sufficient information regarding the terms of sale for the Falcon machine and any machines that are colorable imitations thereof so as to constitute an offer under the applicable law.

(Id. at 7.)

To summarize, Paragraph 5(a) prohibits Camtek from communicating with third parties in the United States for the purpose of offering the Falcon for sale, regardless of the form of communication. Paragraph 5(b) requires advertising and marketing materials to have disclaimers which state that the infringing machines are not being offered for sale in the United States. Based upon this intended meaning, the Court finds no inconsistency between the two paragraphs.

The Court has already heard the parties' arguments with regard to a permanent injunction and made its ruling. The Court therefore declines to reopen argument on this issue and affirms the Order on Final Judgment and Injunctive Relief entered in this case. Accordingly, the Court denies Camtek's Rule 60 Motion for Clarification.

#### **F. Camtek's Motion to Stay Enforcement of the Judgment**

Next, Camtek requests that the Court stay proceedings to execute or enforce the Judgment pending resolution of post-trial motions [Docket No. 566].

Because the Court has now decided a second round of Camtek's post-trial motions, this request has been rendered moot and is therefore denied.

### **G. Attorney's Fees**

In a letter to the Court dated May 5, 2010 [Docket No. 630], August withdrew its Motion for Attorneys' Fees as it is specifically related to statements made at trial involving the Court's claim construction. Nevertheless, August reserved the right to assert other grounds for attorney's fees in this matter as it deems appropriate. Specifically, August states that it is investigating whether Camtek is acting in compliance with the Court's injunction. Thus, while August withdraws its specific grounds to claim attorney's fees, it does not withdraw its Notice of Intent to Claim Attorney's Fees [Docket No. 549]. In light of this fact, the Court terminates August's Motion for Attorney's Fees [Docket No. 572].

### **III. CONCLUSION & ORDER**

Based on the files, records, and proceedings herein **IT IS HEREBY ORDERED THAT:**

1. Camtek's Motion for Judgment as a Matter of Law of No Literal Infringement of U.S. Patent No. 6,926,298 or, in the Alternative, for a New Trial on Literal Infringement [Docket No. 551] is **DENIED**.
2. Camtek's Motion for Judgment as a Matter of Law of No Lost Profits and a New Trial or Remittitur Regarding Reasonable Royalty [Docket No. 556] is **DENIED**.

3. Camtek's Motion for Judgment as a Matter of Law That the Asserted Claims of the '6,298 Patent are Invalid for Obviousness, or, in the Alternative, for a New Trial [Docket No. 561] is **DENIED**.
4. Camtek's Rule 60 Motion for Clarification of the Order on Final Judgment and Injunctive Relief [Docket No. 601] is **DENIED**.
5. Camtek's Motion to Stay Enforcement of the Judgment [Docket No. 566] is **DENIED AS MOOT**.
6. August's Motion for Attorney's Fees [Docket No. 572] is **TERMINATED**.

Date: July 25, 2010

s/ Michael J. Davis  
Michael J. Davis  
Chief Judge  
United States District Court