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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

ATMEL CORPORATION, a Delaware corporation; ATMEL SWITZERLAND, a corporation; ATMEL FRANCE, a corporation; and ATMEL SARL, a corporation,

Plaintiffs,

v.

AUTHENTEC, INC., a Delaware corporation,

Defendant.

Case No. 06 CV 2138 CW (EDL)
Case No. 07 CV 03331 (CW)

DEFENDANT AUTHENTEC, INC.'S REPLY MARKMAN BRIEF AND MOTION FOR SUMMARY JUDGMENT OF NONINFRINGEMENT AND FOR AN EXCEPTIONAL CASE FINDING

Date: May 1, 2008
Time: 2:00 p.m.
Location: Courtroom 2, 4th Floor
Judge: Hon. Claudia Wilken

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TABLE OF CONTENTS

Page

I. INTRODUCTION 1

II. ARGUMENT 2

A. Atmel's Only Authorized Infringement Contentions Fail As a Matter of Law And Undisputed Fact, and It Has Waived Its New Theory By Not Presenting It Earlier. 2

B. AuthenTec Is Entitled To Summary Judgment On Atmel's New Theory 3

1. Summary Judgment Should Be Granted Because The Drive Ring Does Not Meet Atmel's Definition of Sensing Surface 3

a. The Drive Ring Is Not A "Sensing Surface" And Does Not "Detect Contact" 4

b. The "Drive Ring" Is Not A Part Of The "Sensor" – Much Less "A Surface Of The Sensor." 4

c. The Combination Of "Drive Ring + Window" Is Not A Surface, But A Combination Of Components & Surfaces That Serve Different Purposes 8

d. The Drive Ring Is Not Coupled To The Detection Matrix 8

2. Summary Judgment Must Also Be Granted Because The "Drive Ring" Does Not Transform The Nature Of The Pixel Antennae 8

III. THE INTRINSIC EVIDENCE MANDATES A FINDING OF NONINFRINGEMENT (AND ADOPTION OF AUTHENTEC'S PROPOSED CLAIM CONSTRUCTIONS OF SENSOR, SENSING ELEMENTS AND SENSING SURFACE) 10

IV. THIS CASE IS EXCEPTIONAL 15

V. SUMMARY JUDGMENT MUST ALSO BE GRANTED ON ATMEL'S IMAGE RECONSTRUCTION THEORY 15

VI. AUTHENTEC DID NOT WAIVE ANY CLAIMS OR DEFENSES 19

VII. AUTHENTEC'S MOTIONS FOR PARTIAL SUMMARY JUDGMENT SHOULD BE GRANTED 19

VIII. CONCLUSION 20

TABLE OF AUTHORITIES

Page(s)

CASES

Asyst Techs. v. Emtrak, Inc.,
402 F.3d 1188 (Fed. Cir. 2005) 17

Bradford Co. v. Afco Mfg.,
Case No. 1:05-Cv-449, 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio 2006) 14

Kraft Foods, Inc. v. Int'l Trading Co.,
203 F.3d 1362 (Fed. Cir. 2000) 14

KSR Int'l Co. v. Teleflex, Inc.,
127 S. Ct. 1727 (2007) 13

Laitram Corp. v. Rexnord, Inc.,
939 F.2d 1533 (Fed. Cir. 1991) 11

Nissan Fire & Marine Co. v. Fritz Cos.,
210 F.3d 1099 (9th Cir. 2000) 19

Novosteel SA v. United States,
284 F.3d 1261 (Fed. Cir. 2002) 3

Saab Cars USA, Inc. v. United States,
434 F.3d 1359 (Fed. Cir. 2006) 19

Tessera, Inc. v. Micron Tech., Inc.,
423 F. Supp. 2d 624 (E.D. Tex. 2006) 14

RULES

Fed. R. Civ. P. 56(d)(2) 20

I. INTRODUCTION

In Atmel's only authorized infringement contentions, Atmel accused *only* the detection matrix (the pixel antenna array) as corresponding to the claim element "a *sensing surface* coupled to a matrix of several lines of *sensing elements*."[1] (*See, e.g.*, Ex. 39, Ex. A at 5.) AuthenTec's summary judgment motion challenged these contentions (and more). Atmel now concedes, as it must, that these contentions fail to demonstrate infringement as a matter of law and undisputed fact, thereby admitting that the elements of the detection matrix (the pixel antenna array) and the surface corresponding to the matrix do not detect or respond to contact – the required elements of Atmel's claim constructions of "sensing elements" and "sensing surface." This admission is dispositive. Summary judgment should be granted in favor of AuthenTec.

However, in a last ditch effort to save its ill-conceived case, Atmel abandons its previous infringement contentions *on reply* for a new theory of infringement -- that AuthenTec's drive ring is part of the "sensing surface." Beyond the waiver that follows from Atmel's belated raising of this new theory, Atmel's newest claims lack merit because the "drive ring" does not meet even Atmel's own proposed definition of a "sensing surface," a fact that Atmel tries mightily, but unsuccessfully, to hide in its reply. Atmel's definition of "sensing surface" is "*a surface of the sensor* that *detects finger contact* wherein *the sensor is integrated onto a semiconductor substrate* and is not an optical sensor." It is undisputed that the "drive ring," however, does not (1) detect finger contact, and (2) is not integrated onto a semiconductor substrate, and thus, is not even a part of the "sensor" as defined by Atmel. Because even Atmel's new theory fails as a matter of law and undisputed fact based on its own proposed claim constructions, summary judgment should be granted. The Court should also deem the case exceptional and award AuthenTec its fees. Both Atmel's decision to abandon its original contentions and the lack of merit of its new theory highlight the exceptional nature of this case.

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[1] Atmel attempts to draw a distinction in its opposition between "sensing elements" and "contact sensitive elements," and claims that AuthenTec challenged only "contact sensitive elements." This is both wrong and misleading. AuthenTec's motion challenged "contact sensitive elements," "sensing elements" and "sensitive elements," which the parties agree are all subject to the same interpretation. (AuthenTec Mtn. at 1, n.1).

II. ARGUMENT

A. Atmel's Only Authorized Infringement Contentions Fail As a Matter of Law And Undisputed Fact, and It Has Waived Its New Theory By Not Presenting It Earlier.

In its *only authorized infringement contentions*, served on October 23, 2006, Atmel identified just the "EntrePad AES [] Detection Matrix: ◦ 192 x 16 pixels ◦ 9.75 mm x .81mm" as corresponding to "a sensing surface coupled to a matrix of several lines of sensing elements." (Ex. 39, Ex. A at 5.)[2] Not only is the detection matrix the only structure mentioned for the "sensing surface coupled to a matrix of contact sensitive elements" element, the drive ring is not even mentioned.[3] Atmel now concedes that summary judgment must be entered against it as to these contentions.

In an attempt to avoid an immediate end to this case, however, Atmel now claims that its alleged undisputed material facts ("UMFs") I & J make "perfectly clear" that the "drive ring" is part of the sensing surface. This is wrong. Alleged UMF J simply says that the "sensor surface detects finger contact;" it *does not* identify the components of the "sensing surface." Alleged UMF I, the only UMF that mentions the "drive ring," simply says: "[t]he ***sensor device*** includes a drive ring and a detection matrix." UMF I does not indicate that these are the components of the sensing surface, nor would it make sense based on the other "facts." For example, alleged UMF E states: "The AES products have a sensor that detects." UMF E then ***only*** identifies the "detection matrix" as the structure that "detects;" a required element of the "sensing surface" in accordance with Atmel's definition. Moreover, Atmel's newly formed allegation, that the "Sensing Surface = Window + Drive Ring"

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[2] The same contentions were made with regard to the all the "sensing elements" limitations of all asserted claims of both patents. (S*ee* Ex. 39, Exs. A – G at 1, 3, 5, 8-10.)

[3] In amended contentions served on April 10, 2007, which Atmel has never sought leave to serve, Atmel made the same contentions; again the drive ring is not mentioned. These contentions, however, add new claims. Pursuant to Patent L.R. 3-7, "[a]mendment or modification of the Preliminary . . . Infringement Contentions . . ., may be made only by order of the Court, which shall be entered only upon a showing of good cause." Atmel disingenuously claims that AuthenTec has waived its right to claim constructions for certain claim terms because they were not included in the March 15, 2007 Joint Claim Construction Statement. The terms at issue, however, are from claims that Atmel did not assert until Atmel's unauthorized April 10, 2007 contentions.

contention is not mentioned in these contentions.[4] Indeed, the word "Window" appears for the first time on reply. Because Atmel's authorized infringement contentions and undisputed facts fail to include the drive ring as part of the sensing surface,[5] Atmel has waived this claim. *See Novosteel SA v. United States*, 284 F.3d 1261, 1274 (Fed. Cir. 2002) (waiving argument not advanced in opening summary judgment brief).

B. AuthenTec Is Entitled To Summary Judgment On Atmel's New Theory

Even if Atmel had not waived its new theory, summary judgment should be granted on the new theory. Atmel now contends as follows: "Sensing Surface = Drive Ring + Window."[6] (Atmel Reply at 9.) Apparently, Atmel's contention is that including the "drive ring" somehow transforms the "pixel antenna array" into elements that respond to contact. This *unexplained* changed position is completely devoid of merit. The "drive ring" does not meet Atmel's own proposed definition of "sensing surface" and, even if included, does not transform the nature of the pixel antenna array into elements that "respond to contact."

1. Summary Judgment Should Be Granted Because The Drive Ring Does Not Meet Atmel's Definition of Sensing Surface

Atmel's new theory fails as a matter of law and undisputed fact because the "drive ring," alone or in combination with the "Window," does not meet Atmel's definition of "sensing surface." Atmel's definition of sensing surface is: "*a surface of the sensor* that *detects finger contact* wherein *the sensor is integrated onto a semiconductor substrate* and is not an optical sensor."

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[4] Atmel served new infringement contentions after its motion was filed. These contentions are also unauthorized because they far exceeded the scope of the Court's January 31, 2008 order, which only granted Atmel leave to amend to add four additional products – not change its infringement contentions. (Dkt. No. 414.) In any event, the new charts merely contain the same statement as alleged UMF I: "the ***sensor device*** includes the drive ring and detection matrix," but do not mention the new "Drive Ring + Window" contention.

[5] The drive ring is and has always been a physically obvious portion of the AuthenTec sensor devices as to which Atmel has long understood the operation. (*See* Ex. 24.)

[6] Atmel claims AuthenTec surreptitiously changed its proposed claim constructions. AuthenTec forthrightly noted that it had modified some of its claim constructions, but while the words are fewer, the overall substance has not changed: the claims are limited to particular sensors used in a particular way to create a complete image of the fingerprint in a particular way.

a. The Drive Ring Is Not A "Sensing Surface" And Does Not "Detect Contact"

The drive ring is a transmitter. It transmits ("drives") a radio frequency signal into the finger. (Sherlock Decl., ¶3.) Like the light source of an optical sensor, it is the source of RF energy that is ultimately used to indirectly and passively read a fingerprint image from a layer of skin below the surface of the skin. (*See id.*, ¶¶3-5.) It is undisputed that the drive ring does not sense or otherwise read the fingerprint. It is also undisputed that the drive ring ***does not detect contact***. Indeed, Mr. Sherlock declared: "the surface of the sensor that is coupled to the detection matrix does not detect finger contact . . . Moreover, the drive ring in the accused AES devices ***does not detect finger contact.***" (Sherlock Decl., ¶16.) Thus, the drive ring does not and cannot meet Atmel's definition of sensing surface.

Atmel has no evidence to the contrary. Instead, Atmel relies solely on snippets of documentation regarding AuthenTec's area sensor devices – devices that are not even accused of infringement. For example, on page 10, lines 12-14 of its Reply Brief, Atmel states that "contacting the surface of the drive ring is necessary 'to detect the presence of a finger placed on the surface of the sensor matrix . . . .'" Atmel's support for this statement is the Product Specification for the un-accused AES4000 Area Fingerprint Sensor. *See also* Reply at fns. 49, 50, 52, 53, and 54.[7] The AES4000 and other un-accused area sensor devices used contact with the drive ring as a power-saving/power-up mechanism, which is not even "reading the fingerprint" as required by the claims, but is irrelevant in any event because the accused products do not use contact with the drive ring for power-up. (Supp. Setlak Decl., ¶2.)

b. The "Drive Ring" Is Not A Part Of The "Sensor" – Much Less "A Surface Of The Sensor."

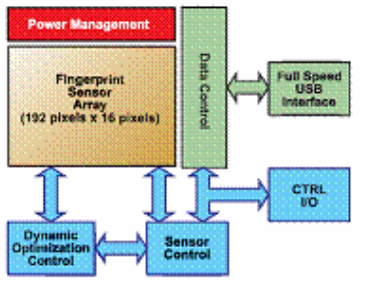
Atmel's proposed claim construction of "sensing surface" requires it to be a "surface of the sensor." Atmel's proposed constructions of "sensor" require that the "sensor" be "[a]ny device that

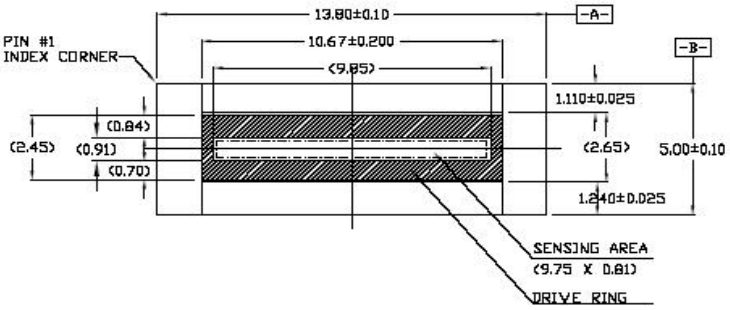
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[7] Exhibit W includes three pages from an AES2550 preliminary specification The drive ring is not mentioned in this excerpt because the presence or lack of an electric field, not the drive ring, is used to power on the AES 2550, and other accused products. (Supp. Setlak Decl., ¶2.)

can detect or measure something" that is "integrated onto a semiconductor substrate." (Atmel Op. Br. at 5.) The drive ring is not a part of the "sensor" as defined by Atmel. In fact, Atmel's entire opposition is based on playing fast and loose with the colloquial use of the word sensor.

Setting aside Atmel's loose use of the term "sensor," the evidence is clear that only one "device" (a portion of the integrated circuit device included in AuthenTec's accused products) could potentially meet even Atmel's overbroad definition of a "sensor:" the detection matrix. As explained in AuthenTec's opening brief, and undisputed by Atmel, what is conversationally called a "sensor" from a customer perspective is an entire packaged device comprised of much more than the "sensor" as defined by Atmel and limited by this patent. (Ex. 21 at 194:12-22; 196:19-197:11.) Circuits integrated into the same substrate as the detection matrix perform non-sensing functions as depicted on the AuthenTec datasheet. (McKenzie Decl., Dkt. No. 399, Ex. I at I-3; *see also* Ex. 21 at 259:4-18.)[8] The AuthenTec datasheets also clearly label the "sensing area." Consistent with the label, the "sensing area" comprises the ***only area*** of the accused devices capable of "reading a fingerprint" at any given time whether the finger is sliding or not. (*See, e.g.*, Ex. 40.) The size of the "sensing area" is 9.75mm x 0.81mm, notably identical to the "detection matrix" identified in Atmel's original infringement contentions.[9]

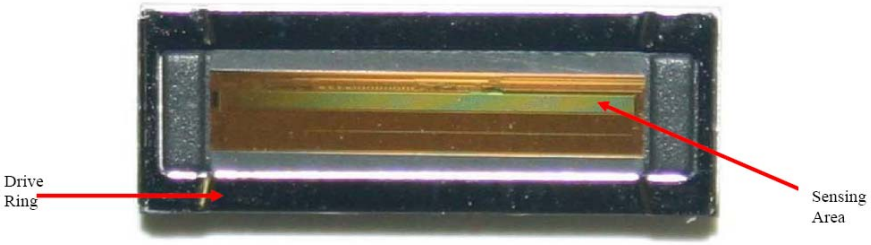




[8] The specification also indicates that other devices, such as analog to digital converter 51, can be integrated into the same substrate as the sensor 50. (Ex. A at 7:36-41.)

[9] One can also observe that the dimensions of the "sensing area" are significantly smaller than the outside dimension that includes the drive ring (10.67 ± 0.2 x 2.65 mm) (and even of the so-called "Window). It is nonsensical, particularly in the context of this patent, to identify as the "sensing surface" an area substantially larger than the area of the fingerprint that can be read at any given time.

Moreover, it is undisputed that the "drive ring" in any of the accused products is not a part of the "sensor" because it is separate from the semiconductor substrate (unlike the other circuits, such as the sensor control circuits, depicted above). Instead, the drive ring – which is made of metal – is either glued on the outside of the packaging, or applied on top of the already completed semiconductor wafer. (*See* Sherlock Decl., ¶11.)[10] Thus, the drive ring cannot be "a surface of the sensor" as defined by



Atmel. In fact, it is not a part of the "sensor" at all as the patent (and Atmel) defines a sensor. A picture of an actual accused AES 2810[11] device is illustrative:

Although the entire copper colored area is the semiconductor device, the gold sensing portion can be visibly observed. The other areas of the semiconductor device include the non-sensing portions described above. Notably, however, the "drive ring" is completely separate from the semiconductor device.[12] The drive ring is the black metal bezel on the outside of the packaging material; it is not integrated onto the semiconductor substrate.

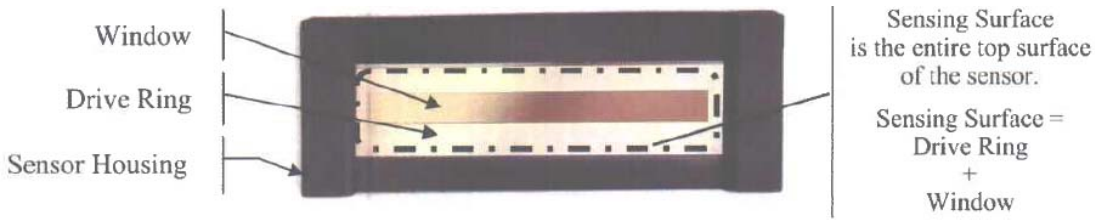
Atmel's contention to the contrary is nothing more than a sleight of hand. In Atmel's brief, Atmel depicts an AuthenTec 1610 device as follows:

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[10] Atmel knows that this is a problem and does not even attempt to argue this issue. Atmel instead argues that the "pertinent part" of its definition of "sensing surface" is met by the drive ring. (Atmel Reply at 10:3-5.)

[11] The configuration of the components of the overall packaged device is the same for the accused AES 1710, 1711, 2810 and 2550 devices. (*See* Ex. 41 at AUTH-A004400, 049747, 049778 & 049799.)

[12] The Court can inspect the 171X and 2810 sensors on Setlak Exhibit 1. For these samples, the drive ring is gold instead of black.



Significantly, this picture is manufactured from whole cloth and is nothing more than Atmel's argument in picture form — it is not evidence by any measure. Furthermore, Atmel's choice of accused product is telling. Atmel chose to label a picture of AuthenTec's 1610 device (and not an accused 1710, 1711, 2810 or 2550 device) because on the accused 1610 device the drive ring is applied on top of the finished surface of the wafer. Thus, by selecting the 1610 device (or the 25XX or 1510 which are similarly designed) Atmel attempts to create the illusion, using a two dimensional picture, that the "drive ring" and the "window" are part of the same surface.[13] This is not the case. The drive ring is a separate component, which can be physically observed by inspecting the products.[14] In fact, the location of the drive ring is merely a design choice that has nothing to do with the operation of the accused devices, and in particular, nothing to do with whether or not the pixel antennae array meets the elements of the claims as defined by Atmel. Indeed, AuthenTec has also devised other completely functional device packages in which the drive ring can be supplied as a completely separate component, or the drive ring takes the form of bars that are separated by substantial packaging from the detection matrix. (*See* Ex. 42 (submitted for demonstrative purposes)).[15]

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[13] Atmel's labeling of this picture is also significant. Atmel labels only the area corresponding to the semiconductor device within the dotted lines as the "entire top surface of the sensor," thereby excluding the "sensor housing." But, as depicted above, for the accused AES 1710, 1711, 2810 and 2550 devices, the drive ring is actually glued to the outside of this housing – thereby located beyond the boundaries of the "sensor" as labeled by Atmel in this picture.

[14] The 25XX, 1510, and 1610 can be inspected on Setlak Exhibit 1. Although it is subtle, the physical boundary between the "Window" and the drive ring can be detected by scraping a fingernail over the surface of the accused device and the two areas are different colors, as shown in Atmel's picture.

[15] The nonsensical nature of Atmel's claims can be further illustrated by considering the "sensing surface area" limitations of the claims. The claims all require that the dimensions of the image created as a result of the claimed reconstruction process be larger than the "sensing surface area." Applying Atmel's new theory, the dimensions of the "sensing surface area" depend on where the drive ring located. Thus, any image created would need to be bigger than the outside dimensions of the drive ring. The accused devices, however, can only create an image as wide as the "sensing area" and thus this limitation is never met even if Atmel's reconstruction claim had merit, which it does not.

Notwithstanding its misleading picture, Atmel knows that the "drive ring" is not a "surface of the sensor" as required by the claims of the patents-in-suit.

(Ex. 43 at 367:18-20 (emphasis added).) Thus, it is clear that the drive ring is "something besides a sensor," not part of the sensor as Atmel would now have it.

c. The Combination Of "Drive Ring + Window" Is Not A Surface, But A Combination Of Components & Surfaces That Serve Different Purposes

What Atmel now contends is the "sensing surface" is not "a surface" at all, it is a combination of at least one component and a surface that operate in different ways. One portion, the drive ring, transmits (it does not "sense"); the second portion, the "Window" and the detection matrix below it are passive elements that read an electric field. Other portions of the "Window" correspond to non-sensing portions of the integrated circuit. These facts are also undisputed.

d. The Drive Ring Is Not Coupled To The Detection Matrix

The drive ring is not coupled to the detection matrix. (Sherlock Decl., ¶16.) Atmel cites no evidence to the contrary. Atmel's argument to the contrary is pure unsupported attorney conjecture.

2. Summary Judgment Must Also Be Granted Because The "Drive Ring" Does Not Transform The Nature Of The Pixel Antennae

Regardless of whether or not the drive ring is included in the "sensing surface," it is undisputed that the pixel antennae array does not respond to contact. As the Sherlock deposition testimony, Sherlock Declaration, Setlak Declaration, and McWilliams Declaration make clear, it is undisputed that the pixel antennae array responds only to an electric field. (Ex. 21 at 209:17-210:19; Sherlock Decl., ¶¶7-9 & 16; Setlak Decl., ¶3; McWilliams Decl., ¶10-14.) The evidence is undisputed that pressing the detection matrix does nothing, and the finger does not even need to be in contact with the device for it to work. Unsupported by any evidence, Atmel's attorneys speculate that contact with the drive ring "actuates" the pixel antenna array as follows: "[s]pecifically, then the surface of the drive

ring and the user's sliding finger are in contact, the drive ring injects a small signal into the finger, which ***creates the electric field used to image the fingerprints***." (Atmel Reply at 10:10-12 (emphasis added).) This is a distorted description, but in any event proves the opposite of Atmel's contentions: it is an acknowledgement that the detection matrix responds to a radio frequency signal – not finger contact. The inquiry need go no further; Atmel's new claims fail as a matter of law and undisputed fact.

Atmel's new theory is also premised on the incorrect assumption that "contact" with the drive ring is *required*. This simply misstates the undisputed evidence. As the Sherlock deposition testimony, Sherlock Declaration, and McWilliams Declaration make clear, only an *electrical* connection needs be made between the drive ring and the finger: the signal must be injected into the finger, but that need not happen via physical contact. As Dr. McWilliams' experiments demonstrate and as is an indisputable principle of physics, radio frequency signals are transmitted without the need for physical contact. Indeed, the same principles of physics that apply to the pixel antennae array apply to the RF transmitter. An RF signal can be transmitted into the finger without direct physical contact with the finger, and the signal transmitted by the layer of skin below the surface of the finger can be read by the detection matrix without contact.[16] These facts are also undisputed.

Atmel also knows that how AuthenTec instructs consumers to use the accused devices has nothing to do with whether the components meet the claim limitations of the patent. AuthenTec instructs users to contact the drive ring (and the "Window") for improved performance of the accused devices (i.e., consistent images across the swipe). This does not mean that the drive ring detects contact or the detection matrix responds to contact.[17] Atmel's lengthy discussion of AuthenTec's instructions as well as Exhibit 1 to its brief is a red herring. If instructing a consumer to contact a particular surface was enough to cause the "sensitive elements" to meet Atmel's definition, then Atmel

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[16] Indeed, as Dr. McWilliams' experiments prove, the RF signal can be injected into the finger *or* elsewhere in the body. (McWilliams Decl., ¶¶13-14.) The injected signal will still propagate through the body including the finger as would any RF signal. In short, the fingerprint can be read without regard where the RF energy source is introduced to the body.

[17]

would not have needed to change its position regarding the "sensing surface" because AuthenTec does not dispute that it instructs its users to contact the "Window." By Atmel's own admissions, instructions to contact the "Window" do not transform the "Window" or detection matrix into a surface that detects or responds to contact. The same is of course true regarding the drive ring.

III. THE INTRINSIC EVIDENCE MANDATES A FINDING OF NONINFRINGEMENT (AND ADOPTION OF AUTHENTEC'S PROPOSED CLAIM CONSTRUCTIONS OF SENSOR, SENSING ELEMENTS AND SENSING SURFACE)[18]

Although Atmel goes to great lengths to cast aspersions on AuthenTec's proposed claim constructions, its arguments fall short. The intrinsic evidence confirms that AuthenTec's products fall outside the scope of the claims of these patents. Tellingly, Atmel cannot even avoid this result relying solely on dictionary definitions to formulate its claim constructions because no meaning broad enough to cover the AuthenTec products can be inferred from the limitations the examiner forced the applicant to add to avoid the prior art. The applicant was forced to amend the claims to exclude devices other than those that read a fingerprint as a direct result of and ***because of*** the contact between the finger and the coupled sensing surface. It is not enough that the images are created ***while*** the finger is in contact with the surface; the invention is limited to a sensor comprised of a matrix of sensitive elements where you ***must*** press on the surface corresponding to the matrix to create an image. And, contrary to Atmel's claims, these limitations are consistent with the specification, which ***only*** discloses pressure or temperature sensitive elements.

Atmel's entire attack on AuthenTec's claim construction is based on a fundamental misinterpretation of the intrinsic evidence, and in particular the file history, in support of its contention that the claims must be broader than AuthenTec's proposed constructions. For example, Atmel now argues that optical sensors *are covered by the claims* even though its proposed claim constructions include the phrase "not an optical sensor." Specifically, Atmel asserts that because the examiner rejected the claims as anticipated three times over an optical sensor, the examiner understood that *other*

[18] AuthenTec incorporates by reference all claim constructions arguments made in its opening Markman brief as to other claim elements.

sensors, *i.e.*, *optical sensors*, fall within the scope of the claims. (Atmel Reply at 6:10-16.) This dramatic change in position evidences both Atmel's "make it up as you go" approach to this case and complete failure of understanding of the legal implications of amending a claim to overcome an anticipation rejection. To be certain, the examiner did reject the overly broad claims as written multiple times as anticipated by optical sensors. The patent finally issued, however, over the anticipation rejections because the examiner repeatedly forced the applicant to amend the claims in a manner that excludes optical sensors from the scope of the claims – and in doing so, also excludes AuthenTec's products from the scope of the claims.

Specifically, as initially submitted, the relevant portion of the claim read: "means for reading a fingerprint when the finger and a sensor belonging to the reading means are in contact and in relative motion of sliding of the sensor and the finger with regards to each other." [19] (Ex. 9 at AML000061.) The claim containing this limitation was rejected as anticipated by Giles, an optical sensor. (*Id.* at AML000102.) Claim 1 was then canceled. (*Id.* at AML000112.) Claim 17 (issued claim 1) was added and it contained the following language: "means for reading a fingerprint including a sensor for providing a series of images of a finger during relative sliding contact between said finger and said sensor." (*Id.* at AML000113.) This claim was rejected as anticipated by another optical sensor, Fujimoto. In response, the applicant amended the claim as follows: "means for reading a fingerprint including a sensor for providing a series of images of a finger *obtained directly from* relative sliding contact between said finger and said sensor." (*Id.* at AML000146.) With regard to these amendments, the applicant also made the following argument:

> Clearly, the fingerprint image is not obtained directly **from** contact between the sensor 1621 and the finger F. The fingerprint image is obtained by light reflected from the fingerprint surface which is picked up b the light-sensitive sensor 1621. **Contact between the finger and sensor 1621 does not produce any image.** The image is obtained indirectly by light reflecting off the finger F, receiving the light by 1621 and

[19] Atmel misses something else significant in its reading of the file history. As originally submitted, the claims were unquestionably in means-plus-function form. Thus, contrary to Atmel's assertions about the inventor's original intent, the inventor would have understood the claims to be limited to what was disclosed in the specification and equivalents pursuant to 35 U.S.C. §112 ¶6. It also explains the original submission of Claim 5 because claim differentiation does not apply to means-plus-function claims. *See Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991). The fact that the examiner forced the applicant to add structural limitations has afforded Atmel its argument that claims are not means-plus-function, but its argument about intent is just plain wrong.

> then synthesizing the fingerprint images. Thus, Fujimoto et al does not disclose or suggest the apparatus as recited in claim 17 having a means for providing a series of partial images of a finger obtained directly from sliding contact between the sensor and the finger.

(*Id*. at AML000148 (emphasis added).)

Notwithstanding these arguments, the examiner again rejected claim 17 as anticipated by Fujimoto. To overcome this further rejection based on Fujimoto, the applicant added the sensing surface and the matrix of sensitive elements limitations and the passive phrase "for providing" was changed to "for generating." (*Id*. at AML000164.) Relying on these amendments, the applicant argued:

> Claim 17 recites the means for reading a fingerprint generates a series of partial images of a finger **from** relative sliding contact between the sensing surface and the finger. On the other hand, Fujimoto et al. clearly do not generate any series of partial images from relative sliding contact, nor is there any suggestion of a sensor with contact sensitive elements. **Sensor 1621 generates images from light reflected from the surface of the finger. The contact of the finger and sensor 1621 does not generate any series of partial images**. Claim 17 is distinguishable over Fujimoto et al."

(*Id*. at AML00168) (emphasis added).) In making these amendments and arguments, the applicant excluded sensors that do not generate images ***as a result*** of contact between the finger and the sensor (a sensing surface coupled to a matrix of sensitive elements) from the scope of the claims. Put more directly, the applicant excluded both optical sensors[20] and the AuthenTec sensors from the scope of the claims as it is undisputed that contact between the finger and the detection matrix of the accused products (or the surface corresponding to it) ***does not*** generate any series of partial images.

Atmel also claims that the inventor *never* made arguments with regard to the combination of Edwards (which utilizes temperature and/or pressure detection) in place of the optical sensor of Fujimoto with regard to any of the independent claims. This, however, is also false. The applicant

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[20] If Atmel's claim construction is adopted, it should not include the redundant phrase "not an optical sensor." Atmel added this phrase to its claim constructions as a contrived way to try to avoid the prior art, but still capture the AuthenTec products even though it is clear that as applied to AuthenTec products, the claims are anticipated by the prior art – including optical sensors. In particular, there is a prior art patent and device that was not before the PTO that Atmel seeks to avoid by adding this language. Atmel, however, can't have it both ways. If it reads the claims broadly enough to cover AuthenTec's products, the claims also are anticipated by various optical (and other) prior art sensors.

made precisely such arguments on multiple occasions with regard to claim 17, which issued as claim 1. (Ex. 9 at AML000150 ("[t]he systems of Fujimoto et al and Edwards et al simply work in different ways and a hybrid combination of the two which would somehow either anticipate or render obvious the present invention recited in claim 17 clearly does not follow from either disclosure and is, in fact, contrary to the disclosures"); *id.* at AML000168 ("[h]owever, neither Fujimoto nor Edwards makes any suggestion that a mechanical sensor as taught in Edwards could be reduced to a size smaller than the fingerprint to be read of that a contact sensitive sensor may generate images from sliding contact between a finger and the sensing surface, as recited in claim 17.")[21]

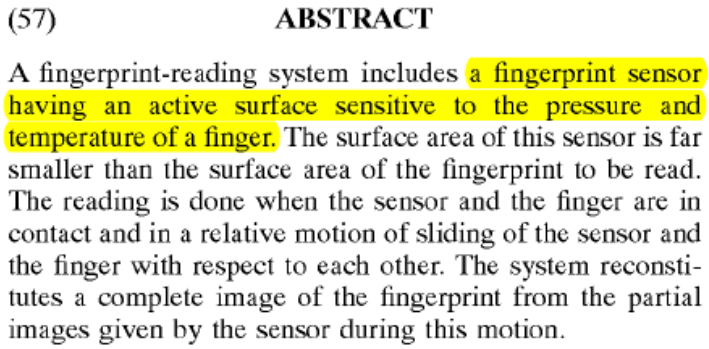
All of Atmel's other arguments regarding the intrinsic evidence can be similarly dismissed. For example, Atmel claims that AuthenTec is committing the "cardinal sin" of claim construction by ignoring alleged alternative embodiments. Atmel is wrong. All embodiments disclosed in the specification, including the alleged "capacitive" embodiment, require pressure on the surface of the sensor to create an image. In particular, the inventor identifies the '056 patent as describing "a principle of reading based on the capacitance of the sensitive elements of the sensor." (Ex. A at 1:58-60.) The '056 patent discloses a matrix of capacitive elements that, consistent with the description of the so-called capacitive embodiment, *require* pressing on the surface of the sensor. Indeed, claim 1 of the '056 patent reads, in pertinent part:

> A fingerprint sensor comprising in combination: (a) a sensing member having *a sensing surface for pressing a finger thereto*; (b) sensing means for sensing the ridges and valleys of the skin of said finger, said sensing means containing a multitude of capacitors located in said sensing member … whereby the capacitances of respective ones of said capacitors are locally changed in accordance with said ridges and valleys *when said finger is pressed against said surface.*

[21] The applicant made these arguments even though the rejections of claim 17 were not based on the combination of Edwards and Fujimoto. By voluntarily making these arguments, the applicant clearly manifested his belief that his invention related to the combination of a temperature and pressure sensitive sensor and image reconstruction, which he believed distinguished claim 17 over the prior art. The examiner did ultimately reject claim 17 as obvious based on the combination of Fujimoto and Edwards in the final telephone interview. The applicant traversed that rejection solely by arguing that there was no teaching in Edwards to reduce the size of the mechanical sensor in Edwards to the size of sensor 1621 in Fujimoto. (Ex. 9 at AML000168.) The examiner accepted this argument, but in view of the current state of the law of obviousness, it is unlikely such claims would issue today. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007).

(Ex. 8 at 6:5-20.; *see also* AuthenTec Opening Br. at 7:9-17.)[22] Moreover, the claims make clear that the so-called "capacitive embodiment" is a pressure sensitive embodiment as claim 7 (which claims the capacitive elements) depends from claim 1. Thus capacitive elements are a subset of "contact sensitive elements."[23]

Consistent with the limited scope of the disclosure in the specification, the inventor described his invention clearly in the Abstract as follows: "a fingerprint sensor having an active surface sensitive to the pressure and temperature of a finger." His intent could not have been clearer, and the limited scope of the claims was reinforced throughout the entire specification. (*See* AuthenTec's Op. Br. at 7:18-8:5.)[24]



(57) **ABSTRACT**

A fingerprint-reading system includes a fingerprint sensor having an active surface sensitive to the pressure and temperature of a finger. The surface area of this sensor is far smaller than the surface area of the fingerprint to be read. The reading is done when the sensor and the finger are in contact and in a relative motion of sliding of the sensor and the finger with respect to each other. The system reconstitutes a complete image of the fingerprint from the partial images given by the sensor during this motion.

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[22] Atmel's claims with regard to "other sensitive layers" also fail. The only sensitive layers disclosed are layers that are sensitive to temperature of pressure. Indeed, the word "pressure" appears 14 times in the specification, the word "temperature" appears 8 times, and the word "heat" appears 4 times – all before the claims begin.

[23] It is notable that Atmel did not initially assert claim 7 in this case; it was "added" in the unauthorized April 10, 2007 contentions. Atmel attempts to create much confusion about claim 7 but Atmel's claims regarding claim 7 fall with its claims regarding claim 1 from which claim 7 depends. Moreover, long before this case was filed, Mr. Mainguet conceded that that the AuthenTec sensors are "modulation" and ***not*** "capacitive" sensors. (*See* Ex. 23.) Similarly, Mr. Sherlock ***did not*** testify that the AuthenTec sensors were "capacitive sensors," but merely described the electrical connection involved in injecting the signal from the drive ring into the finger. *See* Atmel Reply at fn.43. Atmel makes no claim, nor can it, that the pixel antenna matrix, is comprised of matrix of sensitive elements that "enables the sensing of the matrix of capacitance creates by lines of the finger," the actual elements of claim 7, which Atmel completely ignores.

[24] Atmel's argument that claim 5 precludes AuthenTec's constructions of "sensing elements" is also incorrect. The doctrine of claim differentiation only applies if the limitation being imported is identical, which it is not here, because Claim 5 also requires that the "active layer" be sensitive to temperature and pressure. *See Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1362-69 (Fed. Cir. 2000). More importantly, the doctrine of claim differentiation creates only a rebuttable presumption that the same limitation should not be read into the independent claim, which is easily overcome here based on the written description and prosecution history. *See id.* at 1368-75; *Tessera, Inc. v. Micron Tech., Inc.*, 423 F. Supp. 2d 624, 632-33 (E.D. Tex. 2006) (importing a limitation from a dependant claim into an independent claim because presumption was overcome); *Bradford Co. v. Afco Mfg.*, Case No. 1:05-Cv-449, 2006 U.S. Dist. LEXIS 88547, *31-33 (S.D. Ohio 2006) (same).

Regardless of exactly how it is expressed, both of Atmel's claim constructions contemplate that the contact sensitive elements ***must respond to contact with the sensing surface***. Each of the claims, the file history, and the entire specification, including the motivations for the invention that Atmel ignores, contemplates that the only sensors claimed in this patent are those where pressing/contacting (while sliding) the surface of what corresponds to the matrix of contact sensitive elements does something specific: it generates a fingerprint image. Whatever words are used, this limitation cannot be written out of the claim. AuthenTec's proposed claim constructions of sensor, sensing surface, and sensitive elements should be adopted, and summary judgment should be granted under AuthenTec's proposed constructions as well.[25]

IV. THIS CASE IS EXCEPTIONAL

This case is truly exceptional because even applying Atmel's claim constructions to its ever changing infringement contentions, summary judgment must be granted in favor of AuthenTec – a rarity in any patent case to say the least. Atmel's latest "new" theory only highlights the exceptional nature of this case.[26] This case should be deemed exceptional and fees should be awarded to AuthenTec.

V. SUMMARY JUDGMENT MUST ALSO BE GRANTED ON ATMEL'S IMAGE RECONSTRUCTION THEORY

Atmel's claims in its opening brief regarding AuthenTec's alleged infringement of the means for reconstituting were not supported by source code or expert testimony. (*See* Atmel Op. Br. at 23:22-

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[25] Atmel makes a frivolous argument that a 1996 AuthenTec patent application proves that the "Window" is pressure sensitive. This contemplated feature was never implemented in any AuthenTec product. It relates solely to feedback that can be given during image processing, and has nothing to do with the way the nature of the pixel antenna array operates. (Supp. Setlak Decl., ¶3.)

[26] This case is also exceptional because of Atmel's litigation misconduct. Indeed, notwithstanding its previous representations to this Court, Atmel ***now refuses to even take a position*** in response to Court-ordered written discovery on whether or not the original assignment agreements are "valid, enforceable and subsisting," whether Thales has a license with the right to sublicense, and whether there are any other licensees authorized to practice the patents in the United States. Atmel has completely abused and obstructed the discovery process. Because this case is objectively baseless and for the reasons set forth in the motion for sanctions already filed with the Court, this case should be deemed exceptional.

24:2.) Atmel also moved only on literal infringement.[27] Like the rest of its opening motion, AuthenTec pointed out in its Opposition that Atmel's contentions were insufficient to even shift the burden to AuthenTec. Now, in an even more dramatic change of position than with regard to the "sensing surface," Atmel concedes that it did not meet its initial burden by now advancing yet another entirely new theory of infringement allegedly supported by Dr. Colbry. Like its new theory on the sensitive elements and the sensing surface, this new theory should be rejected, but even if it is not, summary judgment should be granted in favor of AuthenTec.

In the first instance, Atmel's contention that a "total image of a fingerprint" can be "a complete image of a fingerprint part" should be rejected as it violates several basic claim construction principles.[28] Atmel first urges this Court to accept extrinsic evidence over the plain meaning of the term "fingerprint," as demonstrated by structure 52 in Figure 5 labeled "fingerprint." (Ex. A at 7:50-51.) Further, Atmel completely ignores that one motivation for the invention, which Atmel repeatedly cites, is that the prior art sensors necessarily had to have a size on the order of magnitude of the size of the finger. (*See, e.g.*, Ex. A at 2:13-18.) Indeed, the specification contemplates a sensor narrower than the finger, but indicates that a limitation of such a sensor would be that it would be necessary to swipe the finger several times to image the desired fingerprint. (Ex. A at 6:4-11). Atmel's proposed construction reads the "total" limitation out of the claim and, in fact, renders the reconstruction element nonsensical – requiring only reconstitution of a partial image from the partial images. Indeed, Atmel now claims that something as small as two (or even one) partial images is enough.[29] It is not;

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[27] Atmel is precluded for claiming doctrine of equivalents for procedural and substantive reasons set forth in AuthenTec's opening brief (*See* 25:13-26:4), and makes no equivalents argument in its reply.

[28] Atmel relies heavily on Dr. Jain for this proposition. Dr. Jain, however, also testified that a "total image" could consist of only one partial image. (Ex. G1 at 84:2-4.)

[29] Contrary to Atmel's claim, Figure 5 does not show an "embodiment" with less than the entire fingerprint. (Atmel Reply at 23:13-14.) Instead, Figure 5 simply provides an example showing the relative positions of a finger and sensor at particular instants; it does not represent the end result of the image-correlating process. (Ex. A at 7:50-61.) Indeed, Atmel disclaimed during prosecution anything other than reconstruction of a complete image. (*See* AuthenTec Op. Br. at 25:2-23.)

Figure 12 shows the end result of image processing as described by the '114 – a complete image of the fingerprint.[30] (Id. 8:65-67.)

Not surprisingly, it is only when Atmel urges an extraordinary definition of an ordinary term that it omits its own dictionary definitions. Atmel has defined the term "total" as "complete comprising the whole." (Dkt. No. 55, Ex. 1A, at 14.) Similarly, Atmel has defined the term "global" as "relating to or embracing a group of items etc.; ***total.***" (Dkt. No. 55, Ex. 1B, at 9.) Each asserted claim therefore requires reconstituting or reconstructing a total or global image of the fingerprint completely, wholly, and in total.[31] If total and global are given their ordinary meaning of a complete image of the fingerprint then there is no question that the code identified by Dr. Colbry makes no effort to create a complete image because he acknowledges that it is designed to create only a series of partial images. (*See, e.g.*, Colbry Decl. ¶¶13, 24 & 25; Figure 2; *see also* Supp. Kraemer Decl., ¶6)

Atmel now claims that it never argued that all partial images collected during a swipe must be used. (Atmel Reply at 14:6-14.) However, Atmel did take this position because it is precisely what the patents disclose.[32] Atmel should be held to its original position,

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[30] Atmel's reference to Claim 19 of the '114 patent is inapposite. Claim 19 recites the combination of three "successive partial images," but does not state that the result is a total or global image. (Ex. A at 12:1-8.) The same is true of other dependent claims, they describe only parts of the process.

[31] Atmel's proposed construction also ignores the all-elements rule and defies common sense. Combination of less than all images would read the "total"/"global" limitation out of the claims; an impermissible result under the all-elements rule. (*See* AuthenTec Op. Br. at 25:16-23.) Further, under the corollary "specific exclusion" principle, the terms "total" and "global" specifically exclude the terms "part" or "portion." *See Asyst Techs. v. Emtrak, Inc.*, 402 F.3d 1188, 1195 (Fed. Cir. 2005).

[32] *See* Atmel Op. Br. at 12:8 ("combine … until the available set of partial images ***is exhausted***.") (emphasis added); *see also* Ex. 45 at 72:22-73:23; Atmel Ex. F at 8.

Atmel's characterization of AuthenTec's software is disingenuous. Atmel argues that "Dr. Colbry established that AuthenTec's software reconstitutes a total image." (Reply at 15:4.)

Thus, AuthenTec cannot infringe under either party's claim construction.

VI. AUTHENTEC DID NOT WAIVE ANY CLAIMS OR DEFENSES

AuthenTec did not waive any claims or defenses. As set forth in AuthenTec's opening brief and confirmed by Atmel's changes in position here, Atmel as the moving party failed to carry its initial burden of producing evidence to support a *prima facie* case of infringement, thus, AuthenTec was under no obligation to produce anything in response. *See Nissan Fire & Marine Co. v. Fritz Cos.*, 210 F.3d 1099, 1102-03 (9th Cir. 2000); *see also Saab Cars USA, Inc. v. United States*, 434 F.3d 1359, 1368 (Fed. Cir. 2006). Second, Atmel moved only for partial summary judgment as to two claims. AuthenTec's opposition squarely addresses the issues raised in the motion by challenging both elements of both claims and preserves all aspects of AuthenTec's noninfringement positions.

VII. AUTHENTEC'S MOTIONS FOR PARTIAL SUMMARY JUDGMENT SHOULD BE GRANTED

AuthenTec's first partial motion for summary judgment requested a finding that AuthenTec "does not and cannot directly infringe any of the asserted claims of either patent-in-suit by *making, selling, or offering for sale* any accused product…." (AuthenTec Op. Br. at 26:7-8.) Atmel does not dispute this contention, and instead provides only alleged evidence of *use* by AuthenTec of AuthenTec's sensors in combination with a microprocessor. Use by AuthenTec, however, was not the issue presented in the motion. Summary judgment in AuthenTec's favor should be granted that AuthenTec does not directly infringe by making, selling, or offering for sale the accused products.

Atmel also misses the point with regard to AuthenTec's Motion for Partial Summary Judgment regarding foreign sales. AuthenTec moved for "partial summary judgment that AuthenTec is not liable for any sales of any sensors that do not enter the United States." (*Id.* at 28:2-4.) Again, Atmel does not dispute this basic principle of patent law.[36] Thus, partial summary judgment should be granted as

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[36] Rather than addressing AuthenTec's position, Atmel submits alleged evidence that products made by third parties and incorporating AuthenTec's sensors enter the United States. (*See* Atmel Reply at 17-18.) Again, this was not the issue presented in the motion for partial summary judgment, but in any event, the evidence Atmel submitted proves that some sensors never come into the United States. (*See, e.g.*, Atmel Exhibit GG at AUTH-A028162-028164, second column, showing sales to Asia and Japan.)

(Continued...)

to sales of AuthenTec's sensors that remain outside of the United States, the number of which will be will be subject to proof at trial or *in limine*. Partial summary judgment in AuthenTec's favor should be granted as to foreign sales. Fed. R. Civ. P. 56(d)(2).[37]

VIII. CONCLUSION

For the foregoing reasons, summary judgment should be granted. This case should be deemed exceptional, and AuthenTec should be granted its fees.

Dated: April 7, 2008

Respectfully submitted,

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AUTHENTEC, INC.

(...Continued)

Moreover, Mr. Sherlock testified that no cell phones incorporating AuthenTec sensors are sold in the United States. (Ex. 44 at 265:3-6.) Thus, sales of all wireless sensor products are excluded from damages.

[37] With regard to customer sales, two years into this case, Atmel concedes it has no evidence of direct infringement. Moreover, Atmel has made no effort to obtain this evidence since the Court's order denying its Motion to Compel with prejudice on January 31, 2008. Because its circumstantial evidence claims fall short, and it admits it has no evidence of direct infringement, partial summary judgment should be granted as to this issue as well as set forth in AuthenTec's opening brief.