

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SMA SOLAR TECHNOLOGY AMERICA, LLC,
Petitioner,
v.

TIGO ENERGY, INC.,
Patent Owner.

Patent 9,966,848
Filing Date: December 28, 2016
Issue Date: May 8, 2018
Title: SYSTEMS AND METHODS FOR ENHANCED EFFICIENCY
AUXILIARY POWER SUPPLY MODULE

Inter Partes Review No.: IPR2023-01175

**PETITIONER'S REQUEST FOR REHEARING
UNDER 37 C.F.R. § 42.71**

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I. INTRODUCTION AND SUMMARY OF THE ISSUES

SMA Solar Technology AG (Petitioner) requests rehearing of the Institution Decision (Paper 12) in which the PTAB declined to institute an *Inter Partes* Review (“IPR”) of U.S. Patent 9,966,848 (the ’848 patent).

Petitioner filed a petition for *Inter Partes* Review on claims 1-20 of the ’848 patent on July 11, 2023. Paper 1. Tigo Energy, Inc. (“Patent Owner”) filed a patent owner preliminary response (“POPR”) on October 27, 2023. Paper 8. In the POPR the Patent Owner asserted that institution of an IPR on the ’848 patent was improper because Mieth allegedly failed to anticipate each claim element of the independent claims 1, 10 and 19. Paper 8, pp. 1, 7, 13. More particularly, Patent Owner asserted that Mieth failed to expressly or inherently disclose a micro-controller as recited in the claims. *Id.*

The PTAB Panel (“Panel”) issued a Written Decision Declining Institution on January 22, 2024, wherein the Panel adopted the arguments of the Patent Owner that the Mieth reference disclosing a “load” failed to expressly or inherently disclose a “micro-controller,” and thus Petitioner had not met the standard set forth in 35 U.S.C. § 314(a) that the petition shows a reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition. Paper 12, p. 2.

In parallel with the IPR proceeding, the parties are involved in a patent infringement proceeding in the District Court in Delaware. *Tigo Energy Inc. v. SMA Solar Technology America LLC*, 22-915-VAC (D. Del.). As stated in the Markman Opinion that issued in that case (and is of record, Ex. 1016), the Court acknowledged the Patent Owner’s arguments during claim construction of the term “load,” stating:

Tigo argues that “load” is a generic term used in the art to describe something that consumes electric power. Ex. 1016, p. 26 (citing Joint Construction Br.).

The District Court further stated:

the Court adopts the parties agreed-upon definition of load, which is something that consumes electric power. Ex. 1016, p. 28.¹

The position on whether a micro-processor is a “load” taken by the Patent Owner in the POPR is in direct opposition to their position of the term “load” taken throughout the claim construction process in the District Court proceeding. Patent Owner failed to bring the fact that they were proffering a contradictory position to

¹ The Court acknowledged Patent Owner’s proffered definition for the term “load” in the parties’ Joint Construction Brief filed in August 2023 that resulted in Mieth’s load 20 reading on the claimed micro-controller prior to Patent Owner’s filing of their POPR, wherein the POPR effectively argued a contrary position that the term load did not read on a micro-controller. In addition, Patent Owner’s counsel reiterated that same earlier claim construction for load contrary to the POPR immediately after filing the POPR in the oral Markman hearing. Markman Hearing Tr., 96;16-19 (Oct. 31, 2023).

the attention of the Panel in their POPR. A first portion of this Request for Rehearing will show that the failure to notify the Panel of the contradictory position directly affected the Panel's ability to properly evaluate whether the "load" in the Mieth prior art reads on the claimed "micro-controller."

A second portion of this Request for Rehearing will show that Petitioner did, in fact, show in its petition that the teaching of a "load" in Mieth was an express disclosure of the recited "micro-controller," as the micro-controller is operating merely as a load in the claims and thus is a load.

A third, last portion of this Request for Rehearing reviews the law of anticipation and obviousness and shows that in the Institution Decision either the law was misapplied or, in the alternative, key case law was overlooked in view of the Markman Opinion (Ex. 1016) that directly impacts the analysis at issue.

II. STANDARD OF REVIEW

A party may file a request for rehearing without prior Board authorization, which is reviewed for an abuse of discretion. 37 C.F.R. § 42.71(c)-(d). Failure to consider contradictory material evidence associated with a parallel litigation proceeding in the IPR constitutes an abuse of discretion. *Ultratech, Inc. v. CaptionCall LLC*, 872 F.3d 1267 (Fed. Cir. 2017). Failure to consider evidence and/or arguments submitted in a petition may constitute an abuse of discretion. *Illumina Inc. v. The Trustees of Columbia Univ. in the City of New York*, IPR2013-

00011, Paper 44 at 2 (May 10, 2013)(holding that an incorporated by reference publication containing material evidence being overlooked in the petition warranted reversal in an institution decision). Lastly, a decision based on “an erroneous interpretation of the law” is an abuse of discretion. *Star Fruits S.N.C. v. United States*, 393 F.3d 1277, 1281 (Fed. Cir. 2005).

III. ARGUMENT

A. The PTAB Panel failed to consider the newly submitted Markman Opinion evidence (Ex. 1016) that contains a Patent Owner admission that impacts the decision whether Mieth discloses a micro-controller, and such admission, that contravenes a position taken by the Patent Owner in this present proceeding, was not brought to the attention of the PTAB.

The issue raised by the Patent Owner Preliminary Response (“POPR”) was whether Mieth’s disclosure of a load 20 reads on the claim limitation “micro-controller.” On p. 26 of the Markman Opinion (Exhibit 1016) construing the claims of the ’848 patent (which was overlooked in the Institution Decision), the District Court states, “Tigo argues that ‘load’ is a generic term used in the art to describe *something that consumes electric power.*” (Emphasis Added). Ex. 1016, p. 26. Petitioner acknowledges that the claim term at issue in the Markman Opinion was not the term “micro-controller” (rather, the term was “switchable load”), however, the Patent Owner took a claim construction position in the Markman proceeding regarding the term “load” that had a direct bearing on the one claim element they attacked in their POPR. Further, in doing so, Patent Owner

took a contrary position in the POPR on the meaning of the term “micro-controller” to not be a “load” and failed to inform the PTAB Panel of such contrary position. More particularly, the Patent Owner argued in the Markman proceeding that a “load” was something that consumes electric power (which the claimed micro-controller does in the claims at issue when receiving the second output), while arguing to the PTAB in the present proceeding that the micro-controller is distinguishable from the load 20 expressly disclosed in Mieth. ***A micro-controller as arranged in claims 1, 10 and 19 to be powered by the second output consumes electric power, and thus by Patent Owner’s own admission a micro-controller constitutes a load under their proffered claim construction of the term “load”.***

Failing to notify this Panel of the contrary position taken on this key claim term touches on each party’s duty of candor under 37 C.F.R. § 42.11 before the PTAB. *Facebook, Inc. v. Sound View Innovations, LLC*, IPR2017-00998, Paper 13 (PTAB Sep. 5, 2017)(holding that while it is not improper for a party to take inconsistent claim construction positions in district court and PTAB proceedings, the party who does so is obligated to inform the Board of its prior arguments). While such failure to notify may have been inadvertent, petitioner contends that providing this PTAB Panel knowledge of this contrary position regarding what is the meaning of a “load” according to the Markman Opinion (Ex. 1016), and that such definition

encompasses the micro-controller claim element would have been noteworthy to this Panel in determining whether Mieth is anticipatory.

The Panel should have had the opportunity to consider the issue in light of this undisclosed information. Thus, rehearing is requested as maintaining a decision not to institute an IPR proceeding under such circumstances constitutes an abuse of discretion.

B. The PTAB failed to consider Petitioner's reliance on Ex. 1014 in support for its assertion that the load 20 disclosed in Mieth reads on the micro-controller recited in the claims of the '848 patent.

In declining institution, the Panel stated:

Under the applicable standard for anticipation, neither Petitioner nor its declarant provides any analysis that would show that one skilled in the art would have reasonably understood or inferred from Mieth that load 20 is a micro-controller. *Eli Lilly*, 849 F.3d at 1074–1075 (Fed. Cir. 2017). Paper 12, p. 12.

Petitioner disagrees. The petition unambiguously asserts that the load 20 of Mieth (Ex. 1002) reads on a micro-controller, stating:

Mieth discloses a load 20 that is powered by the second output of the power supply apparatus 19 (second stage power converter). A PHOSITA would understand that a load in a circuit can be or include a micro-controller... as shown in Fig.1(annotated-1D) below. Ex.1007, ¶¶ 102-10; *Ex.1014, 1180, Fig.5*. Paper 1, p. 23, 29. (Emphasis added).

The petition also states that a combination of Mieth and Balogh render claims 1, 10 and 19 obvious, and thus the issue is not only does Mieth read on a micro-controller under Section 102, ***but also whether Mieth reads on the element under Section 103.*** Paper 1, pp. 19, 53. So the issue is not only whether Mieth expressly teaches a micro-controller as arranged in the claims, but also whether “the differences between the subject matter sought to be patented and the prior art are such that 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.” Paper 12, p. 7 (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007)).

The petition asserts that Mieth’s load 20 expressly discloses the micro-controller claim element, and cites to the expert report and an exhibit of record. Paper 1, p. 23. More particularly, the expert report opines that a PHOSITA understands that the term load reads on a micro-controller. Ex. 1007, ¶ 103. In addition, both the petition and the expert report cite to Ex. 1014, Fig. 5, to buttress the assertion the micro-controller as arranged in the claims operates as a load, and thus the load 20 of Mieth reads on the claimed micro-controller. Fig. 5 of Ex. 1014 is provided in annotated form below for the Panel’s easy reference.

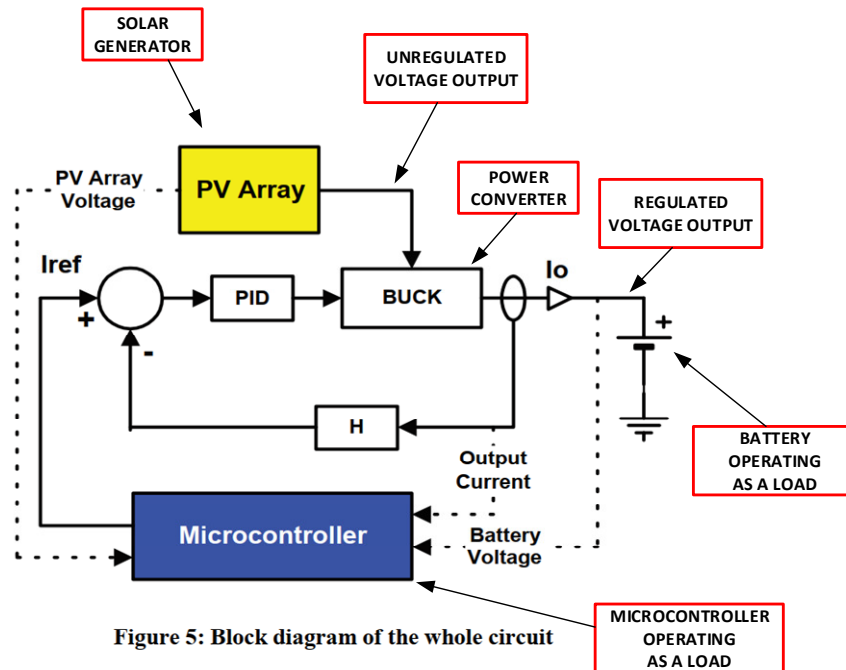


Fig. 5 of Ex. 1014 shows a photovoltaic (PV) array that operates as a power source. The PV array outputs a DC current with an unregulated voltage to a buck converter (e.g., a power converter) that down-converts the unregulated PV array voltage to a regulated voltage that is output to a battery and a microcontroller that each consume electrical power from the buck converter and thus each operate as a load (see the output of the buck converter that charges the battery and is fed as an output to the microcontroller to power the microcontroller (dotted line)).

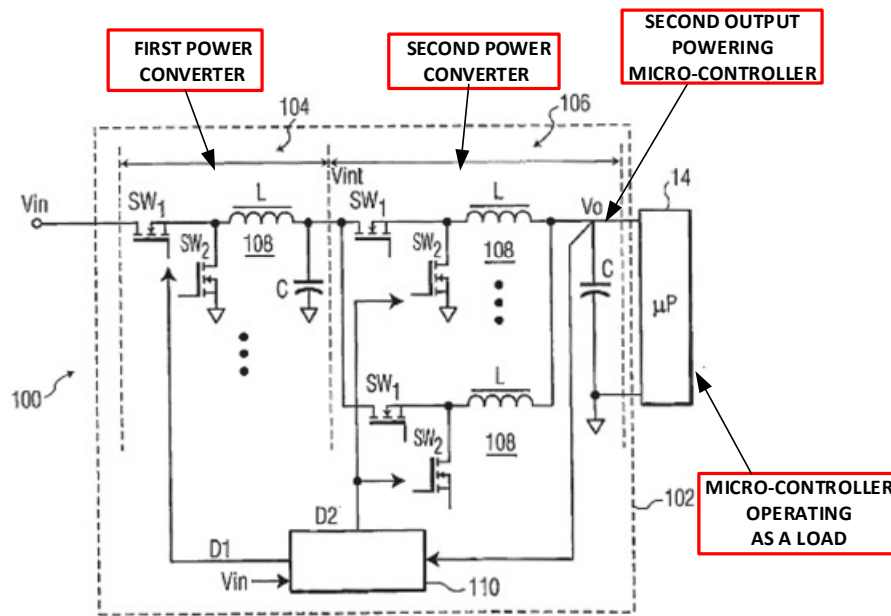
Therefore Ex. 1014 clearly supports petitioner's contention that "load" is a generic term, *and that various forms of circuitry that consume electrical power operate as a load, including, in this example, a battery and a microcontroller.* As a microcontroller is a species of the generic term load and is operating as a load in

the claims (i.e., being powered by the second output in claims 1, 10 and 19), Ex.

1014 shows that a PHOSITA knows that the load 20 of Mieth includes the micro-controller claim element at issue (as the micro-controller as claimed operates as a load) and thus reads on the recited claim element under Section 102 and certainly does so under Section 103, as a PHOSITA would appreciate the obviousness.

Ex. 1012 of record also shows a micro-controller consuming electrical power and therefore operating as a load. Fig. 2 of Ex. 1012 provided below shows a cascaded power converter architecture, wherein a first power converter 104 drives a second power converter 106 having a second output (V_o) that powers a microprocessor 14, which is synonymous with a micro-controller. Operation of the circuit is provided in paragraph [0018] of the Exhibit, where it states:

The two-stage cascaded buck power delivery system 100 operates to provide an output voltage V_o at the output of the second buck stage 106 in response to an input voltage V_{in} applied to the input of the first buck stage 104.... The input voltage V_{in} is typically a pre-regulated bus voltage of 12 V+/-15% or a battery voltage of 6-24 V, ***and the output voltage V_o is the processor voltage of 0.x-1.x V.*** (Emphasis added).



Ex. 1012

The microprocessor 14 receives the second output (V_o) and consumes electrical power provided by the second output of the second power converter 106 *and thus operates as a load* in the same manner as the micro-controller of claims 1, 10 and 19 at issue. Thus, Mieth discloses the element under either Sections 102 or 103.

Lastly, the '848 patent (Ex. 1001) itself clearly indicates that the micro-controller claim element is a load. For example, the '848 patent states:

Circuit (400) therefore can be used to address the false start problem that occurs when the solar panel is able to provide enough output voltage when it is not connected to the output, but not enough to sustain even a small current provided by the buck converter (402) to its load, such as a control logic, a control circuit, a micro-controller, etc. (Ex. 1001, 8:28-34)(Emphasis added).

Typically, the load of resistor P1 (405) should exceed the load of buck converter (402) (**buck converter's load being the MCU which is not shown**).... (Ex. 1001, 8:55-58)(Emphasis added).

The '848 patent admits that its micro-controller (i.e., the MCU, see Ex. 1001, 8:36-37) is a load. Thus, a PHOSITA would readily understand that the load 20 of Mieth reads on the claimed micro-controller under Sections 102 or 103.

In summary, the petition expressly states that the load 20 of Mieth reads on a micro-controller, and both the petition and the expert report cite to Fig. 5 of Ex. 1014 in support for the contention that the claimed micro-controller as arranged in the claims operates as a load and thus is a load, making Mieth anticipatory. Ex. 1012 provides further evidence that a PHOSITA understands that the micro-controller of claims 1, 10 and 19 operates merely as a load, and thus is a load.

Lastly, the '848 patent itself expressly states that its micro-controller is a load.

Ex. 1001. The Institution Decision failed to take this material evidence of record into account. Accordingly, the decision to deny institution was based on an incomplete consideration of all facts presented within the petition and should be reversed.

C. The law on anticipation and obviousness supports Petitioner’s contention that Mieth’s load 20 reads on a micro-controller and thus the cited prior art anticipates the claims listed in Ground A of the petition.

As stated in the Institution Decision, the dispositive question on anticipation is whether one skilled in the art would have *reasonably understood or inferred from a prior art reference* that every claim element is disclosed in that reference. Paper 12, p. 7 (citing *Eli Lilly*, 849 F.3d at 1074–1075 (emphasis added)). Further, a prior art reference may anticipate a claim without using the same language as the claim. *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 910 (Fed. Cir. 2022)(holding that while elements must be arranged in the same way as the claim, the reference need not disclose the element in the very same terms used by the patent). Lastly, whether a generic prior art disclosure anticipates everything within the genus depends on the factual aspects of the specific disclosure and the particular products at issue. *Sanofi-Synthelabo v. Apotex, Inc.*, 550 F.3d 1075, 1083 (Fed. Cir. 2008). In the present instance, the Institution Decision erred in holding that Mieth fails to anticipate the micro-controller claim element. As will be addressed in greater detail below, the arrangement of the micro-controller in the claims dictates that the claim element is operating merely as a load, and thus is a load. Therefore, the disclosure of the generic term “load” in the Mieth reference anticipates the species term “micro-controller” in the recited claims.

As highlighted earlier in Section A, the District Court adopted Patent Owner's construction of the term "load" as *something that consumes electrical power*. Ex. 1016, p. 26. The micro-controller of claims 1, 10 and 19 is connected to receive, and is selectively powered by, a second output of a second stage power converter (e.g., elements [1H], [10D], [10E], [10H], and [19F]). Paper 1, Claims Appendix. Further, *the patent owner admits in the '848 patent disclosure that the micro-controller claim element is a load*. Ex. 1001, 8:30-36, 57-60 (stating, "buck converter's load being the MCU."). Furthermore, neither the claims nor the description of the '848 patent provide any differentiating configuration or implementation of the micro-controller that is different from a load. In addition, there is no disclosed interaction between the micro-controller and the other claim elements. Therefore because the micro-controller and load are operatively equivalent in the context of the claim language as defined by the '848 patent claims and description (Ex. 1001, 8:30-36), the micro-controller is synonymous with a load. *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th at 910. Thus, the claimed micro-controller consumes electrical power, *and is a load according to the language of the claims and the Patent Owner's own admissions*. The load 20 of Mieth therefore reads on the claimed micro-controller under Section 102, and certainly under Section 103.

Alternatively, or in addition, as the term “load” has been held by the Court to be a generic term for various circuit elements that consume electrical power, *the genus disclosure of Mieth anticipates the species recitation of micro-controller in the claims under the prevailing Federal Circuit case law*. More particularly, as the claim construction of the meaning of the term “load” has been defined as something that consumes electrical power, a PHOSITA can readily envisage which circuit elements fall within the genus (i.e., those that functionally operate as a load in that they consume electrical power) and thus constitute anticipated species of the genus. *Sanofi-Synthelabo v. Apotex, Inc.*, 550 F.3d at 1083; *Eli Lilly & Co. v. Zenith Goldline Pharm., Inc.*, 471 F.3d 1369, 1376 (Fed. Cir. 2006)(holding that the issue of anticipation turns on *whether the genus was of such a defined and limited class that one of ordinary skill in the art could “at once envisage” each member of the genus*)(Emphasis added). The disclosure of a load and the recitation of the micro-controller at issue satisfies this criteria, and thus the recited claim element is anticipated or rendered obvious by Mieth.

For example, claim elements [1H], [10D], [10E], [10H] and [19F] show the micro-controller operating as a load. Paper 1, Claims Appendix. That is, each claim element recites the micro-controller being powered by the second stage power converter. *In each instance, the claim language dictates that the micro-controller consumes electrical power and thus is a load*. Thus, the load 20 of

Mieth reads on the micro-controller of the claims under Section 102 and certainly under Section 103, as a PHOSITA can readily envisage what circuit elements such as the micro-controller of the claims fall within the genus as they operate as a load (i.e., those that consume electrical power) and thus constitute anticipated species of the genus.

For the reasons set forth above, *one skilled in the art would have reasonably understood or inferred from Mieth that every claim element is disclosed in that reference.* Alternatively, Mieth satisfies the requirements of obviousness for such claim elements. Therefore, maintaining the decision to not institute an IPR under such circumstances constitutes an abuse of discretion.

IV. CONCLUSION

For the reasons set forth above, an abuse of discretion has been shown, and a reasonable likelihood exists that Petitioner will prevail on at least one claim. The Panel should grant SMA Solar Technology's request for rehearing, institute the IPR, and find claims 1–20 of the '848 patent invalid over the instituted grounds.

Respectfully submitted,

/Thomas G. Eschweiler/
Thomas G. Eschweiler (Reg. No. 36,981)
Nathanael J. Smith (Reg. No. 81,072)
Eschweiler & Potashnik, LLC
195 S. Main St., Suite 400
Akron, Ohio 44308
T: 216-502-0600
teschweiler@epiplaw.com
njsmith@epiplaw.com

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the above-captioned **PETITIONER’S REQUEST FOR REHEARING UNDER 37 C.F.R. § 42.71** was served electronically in their entirety on February 19, 2024, upon the following parties by email:

- Heath J. Briggs - BriggsH@gtlaw.com
- Trenton A. Ward - Trenton.Ward@gtlaw.com
- Leif Olson - OlsonL@gtlaw.com
- Stephen M. Ullmer - UllmerS@gtlaw.com
- Tigo-IPRs@gtlaw.com

Respectfully submitted,

February 19, 2024

 /Denise Huspaska/
Denise Huspaska
Patent Paralegal
Eschweiler & Potashnik LLC
195 S. Main St., Suite 400
Akron, Ohio 44308
T: 216-502-0600