

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VICOR CORPORATION,

Petitioner,

v.

DELTA ELECTRONICS, INC.,

Patent Owner.

PTAB Case No. IPR2024-00704

U.S. Patent No. 8,711,580

**PATENT OWNER'S PRELIMINARY SUR-REPLY IN RESPONSE TO
PETITIONER'S PRELIMINARY REPLY**

Patent Owner submits this Paper in response to Petitioner’s Reply (Paper 9).

I. PETITIONER’S CONSTRUCTIONS SHOULD BE REJECTED

Petitioner requests the Board to institute trial under constructions (its “Patent Owner’s Apparent Construction”) that neither party advocates as being proper under *Phillips*. This is an absurd situation not contemplated by the rules, which require Petitioner to identify its constructions with particularity under the *Phillips* standard. 37 C.F.R. §§ 42.100(b) and 42.104(b)(3); *Facebook, Inc. v. Sound View Innovations, LLC*, No. IPR2017–00985, Paper 17, at 6–7, 13 (P.T.A.B. Sept. 5, 2017).

There is no support—or argument—on the record that Petitioner’s “Patent Owner’s Apparent Construction” is proper under *Phillips*; it should therefore be rejected. Petitioner applied its own interpretation of Patent Owner’s understanding of the claims but never advocated for a plain and ordinary meaning. (Paper 2 at 6-10.) Patent Owner rebuked Petitioner’s misattribution of “Patent Owner’s Apparent Construction” and explained its constructions under the *Phillips* standard. (Paper 6 at 4-11.) Petitioner’s Reply did not advocate for any construction as being proper—avoiding the central issue altogether—and instead attempted to find parallels between constructions. (Paper 9 at 1-3.) As a result, the record is devoid of any argument that Petitioner’s construction is proper.

The only constructions on the record under *Phillips* are Patent Owner’s; they should accordingly be adopted. While Petitioner was allowed a reply to address claim construction, it did not advocate for—or against—any construction. Instead,

Petitioner argued that Patent Owner's constructions are vague, but at the same time materially similar to Petitioner's. As a consequence, Patent Owner's constructions are the only ones presented as proper under *Phillips* and should be adopted.

Moreover, Petitioner's analysis on Patent Owner's actual constructions is deficient and incorrect. As an initial matter, Petitioner addresses a single disputed phrase and ignores others in dispute. (Paper 6 at 5-11 (describing 6 constructions).) Consequently, the majority of Patent Owner's constructions are un rebutted.

Petitioner's analysis is incorrect; it avoids the principal dispute between the party's constructions: feedback between the buck converter and resonant converter. (Paper 9 at 1 (arguing that the word "feedback" is not present).) The claims—and the terms ignored by the Reply—make clear that there is "a first controller" that (1) "determines that the resonant converter generates the over-current" and (2) "decreas[es] a duty cycle of ... a buck converter ... when the resonant converter generates the over-current." (EX1001 at 11:21-27.) The feedback concept is captured by the terms: the controller must determine a resonant converter's condition and it must perform a function based on that condition on the buck converter. Patent Owner's constructions capture this feedback and should consequently be adopted.

Furthermore, Petitioner's arguments that its Petition already covers the claimed feedback are wrong. The Reply reiterates Petitioner's position that the buck converter's output current is the current determined, and it is the buck converter's

duty cycle that is modified. But, this is plainly not the claims; they require “a first controller” that **(1)** “determines that the resonant converter generates the over-current” and **(2)** “decreas[es] a duty cycle of ... a buck converter ... when the resonant converter generates the over-current.” Thus, the Petition relies on an incorrect claim interpretation.

Finally, Petitioner’s “have its cake and eat it too” argument is mere projection. Petitioner is requesting the Board institute trial under constructions neither party offers as correct, simply because Petitioner purportedly has art under those constructions relating to its older products (and wishes to repeat VTM/PRM throughout its papers). Moreover, Petitioner’s request to put claim interpretation on-hold until Petitioner’s post-institution reply in seeming hope that Patent Owner will provide argument Petitioner can then capitalize on is strongly antithetical to the Board’s rules. 37 CFR § 42.104(b)(3). A Petition must identify how the claims are to be construed, and Petitioner’s attempt to upend the process should be rejected.

II. HWANG IS CUMULATIVE OF JOSHI

The Reply ignores the Preliminary Response’s points on Joshi’s cumulative teachings presented to the USPTO. The Reply argues that Joshi failed to teach current limiting and only teaches converter shutdown. (Paper 9 at 3.) This is, however, at odds with the record. The Preliminary Response demonstrates that Joshi taught both: **(1)** an “algorithm running ... to adjust the PWM duty cycle continuously” based on “current flowing through the buck converter” and **(2)** “a fault

resulting in ... excessive current ... the protection interrupt ... caus[ing] the PWM signals to be turned off,” and that both of those teachings were presented to the USPTO in response to a rejection. (Paper 6 at 24 (citing EX1002 at 50, 51); *see also id.* at 25 (citing EX2004 at ¶¶ 37, 38 (teaching (1)), 73, 78 (teaching (2))). (1) and (2) are further taught in Hwang and are, therefore, cumulative with Joshi. (Paper 6 at 25-26.) The Reply does not substantively address Joshi or the rejection.

Petitioner attempts to distinguish Joshi and Hwang by emphasizing Hwang’s “soft short” and “hard short” discussion, but these conditions relate to how long it takes for start-up after shutdown. As Petitioner acknowledges, the PWM switch SW1 is set to open when there is an overcurrent. (Paper 9 at 4.) This causes a startup condition (“soft-start”) to limit a duty cycle during startup to prevent a current surge. (EX1007 at 4:25-27.) “Soft-start” is controlled via capacitor C2’s voltage, which is charged via a current source (*id.* at 4:28-36) and discharged during an over-current condition. (Paper 6 at 21-22; EX1007 at 5:6-20.) “Hard-short” and “soft-short” merely equate to the amount capacitor C2 has been discharged and, consequently, how long it takes C2 to recharge and how long it takes to place the circuit in a normal operating condition. (EX1007 at 3:7-13.) As a result, Hwang remains cumulative to Joshi because both describe turning off the PWM switch during an overcurrent.

The Petition fatally does not analyze the “hard-short” and “soft-short” modes in its grounds. (Paper 2 at 27-30, 54-56.) The Petition instead conflates all mode

discussions into one, mixing Hwang’s voltage regulation, overcurrent, and start-up teachings. (*e.g.*, Paper 2 at 29 (for Ground 1, 1[c], relying on 3:38-50 which describes that “the output voltage V_O is regulated in a closed feedback loop”), 56 (for Ground 2, [1d], relying on EX1007 at 3:33-35 which is directed to the duty cycle limiter that sets an upper bound).) The Reply further mixes and misstates concepts as well, *e.g.*, arguing that “Hwang maintains a constant current by decreasing the duty cycle,” *i.e.*, regulating. Petitioner’s attempt to supplement should be rejected.

III. GROUND 2 IS NOT BASED ON THE *PHILLIPS* STANDARD

Petitioner argues that Ground 2 is based on the plain and ordinary meaning, but the Reply misses the mark. Nowhere in the Petition is there an articulation of the proper *Phillips* construction. Making matters worse, the entirety of Dr. Baker’s opinion relies solely upon Petitioner’s self-made “Patent Owner’s Apparent Construction.” (Paper 6 at 12-13 (citing EX1003 at ¶¶ 49-54, 100, 102, 104).) Dr. Baker’s analysis is relied-upon throughout Ground 2. As such, the core elements of the Petition are not based on the proper *Phillips* standard.

IV. PETITIONER FAILS TO ADDRESS NON-OBVIOUSNESS

Patent Owner’s secondary consideration evidence should be given weight pre-institution. Petitioner sought Reply, but its Reply only concludes that Patent Owner’s arguments should be rejected; in doing so, it ignores Patent Owner’s evidence (Dr. Phinney and contemporaneous art of Joshi) relating to others’ failures. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966) (describing factors).

Dated: August 27, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I certify that I caused to be served a true and correct copy of the foregoing: PATENT OWNER'S PRELIMINARY SUR-REPLY IN RESPONSE TO PETITIONER'S PRELIMINARY REPLY by email to the electronic service addresses for Petitioner on the date indicated below:

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