

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

POWER INTEGRATIONS, INC.,
Petitioner,

v.

SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC,
Patent Owner.

Case IPR2017-01907
Patent 6,333,624 B1

Before BRYAN F. MOORE, J. JOHN LEE, and KAMRAN JIVANI,
Administrative Patent Judges.

JIVANI, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Power Integrations, Inc. (“Petitioner”) requested an *inter partes* review of claims 6, 11, 12, 15, 24 and 28 (the “challenged claims”) of U.S. Patent No. 6,333,624 B1 (Ex. 1001, “the ’624 patent”). Paper 2 (“Petition” or “Pet.”). Semiconductor Components Industries, LLC¹ (“Patent Owner”) did not file a Preliminary Response. Upon consideration of the Petition and Preliminary Response, we instituted an *inter partes* review of the challenged claims pursuant to 35 U.S.C. § 314. Paper 6 (“Decision on Institution” or “Dec. on Inst.”), 18.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 15 and 24 are unpatentable. We further determine that Petitioner has failed to show by a preponderance of the evidence that claims 6, 11, 12, and 28 are unpatentable.

II. BACKGROUND

A. *Procedural History and Asserted Grounds of Unpatentability*

Petitioner advanced the following grounds of unpatentability in the Petition (Pet. 4):

1. Claims 6, 15, and 24 as anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,305,192 (“Bonte”) (Ex. 1004);
2. Claims 11 and 12 as rendered obvious under 35 U.S.C. § 103 by Bonte;

¹ Patent Owner identifies ON Semiconductor Corporation as an additional real party in interest. Paper 3, 2.

3. Claim 6 as anticipated under 35 U.S.C. § 102(b) by Ashok Bindra, *Ripple Regulator Takes Off On Merced's Command*, ELEC. DESIGN, Oct. 1998, at 33–36 (“Bindra”) (Ex. 1005); and
4. Claims 15, 24, and 28 as rendered obvious under 35 U.S.C. § 103 by Bindra and Bonte.

In our Decision on Institution, we instituted review of all challenged claims based on the grounds enumerated above. Dec. on Inst. 18.

After institution, Patent Owner filed a Patent Owner Response (Paper 11, “PO Resp.”), and Petitioner filed a Reply in support of its Petition (Paper 13, “Reply”). Patent Owner then filed, with our prior authorization, a Sur-Reply (Paper 21, “Sur-Reply”) and a motion to strike eleven exhibits and related arguments that Patent Owner contends were not present in the Petition (Paper 23, “Motion”). Petitioner opposes Petitioner’s Motion (Paper 25, “Opposition”).

Both parties requested an oral hearing, and a hearing was held on November 16, 2018. Paper 26. A transcript of the oral hearing has been entered into the record. Paper 30 (“Tr.”).

B. Testimony

Petitioner supports its challenge with a declaration of Dr. Tamas Szepesi. Ex. 1003 (“Szepesi Declaration”). Dr. Szepesi testified by deposition on May 15, 2018, and a transcript of his testimony has been entered into evidence. Ex. 2003. After his deposition, Dr. Szepesi further submitted a supplemental declaration in support of the Petition. Ex. 1019 (“Szepesi Supplemental Declaration”).

Patent Owner supports its opposition with a declaration of Dr. Douglas Holberg. Ex. 2001 (“Holberg Declaration”). Dr. Holberg

testified by deposition on August 8, 2018, and a transcript of his testimony has been entered into evidence. Ex. 1021.

C. Related Proceedings

The parties identify (Pet. 2; Paper 3, 2–3) the following consolidated district court action consisting of two underlying cases, one of which involved assertion of the '624 patent: *Power Integrations, Inc. v. On Semiconductor Corp. et al.*, 5:16-cv-06371-BLF, 5:17-cv-03189-BLF (N.D. Cal.). Ex. 1018 (Transfer Order). Three weeks before the oral hearing in the instant proceeding, the United States District Court for the Northern District of California issued an Order Construing Claims in the consolidated action, and that Order has been entered into the record of this proceeding. Ex. 2005.

D. Overview of the '624 Patent

The '624 patent relates to switching power supplies that convert an AC signal to a regulated DC signal. Ex. 1001, 1:6–8. Depending on the configuration, a switching power supply uses either a transformer or an inductor as an energy transfer element. *Id.* at 1:15–17. If using a transformer, the transformer has a primary side and a secondary side. *Id.*

According to the '624 patent, most prior art switching power supplies have a feedback mechanism on the secondary side of the transformer. *Id.* at 1:65–66. This feedback mechanism provides a feedback signal to a regulator circuit to regulate the output voltage of the switching power supply. *Id.* at 1:66–2:1. The feedback mechanism typically is comprised of optical devices together with a reference and error amplifier installed to the secondary side of the transformer. *Id.* at 2:1–2:4. The '624 patent seeks to

provide a switching power supply that uses only primary side information to regulate the output, thereby reducing secondary side feedback devices.

Figure 2 of the '624 patent is reproduced below.

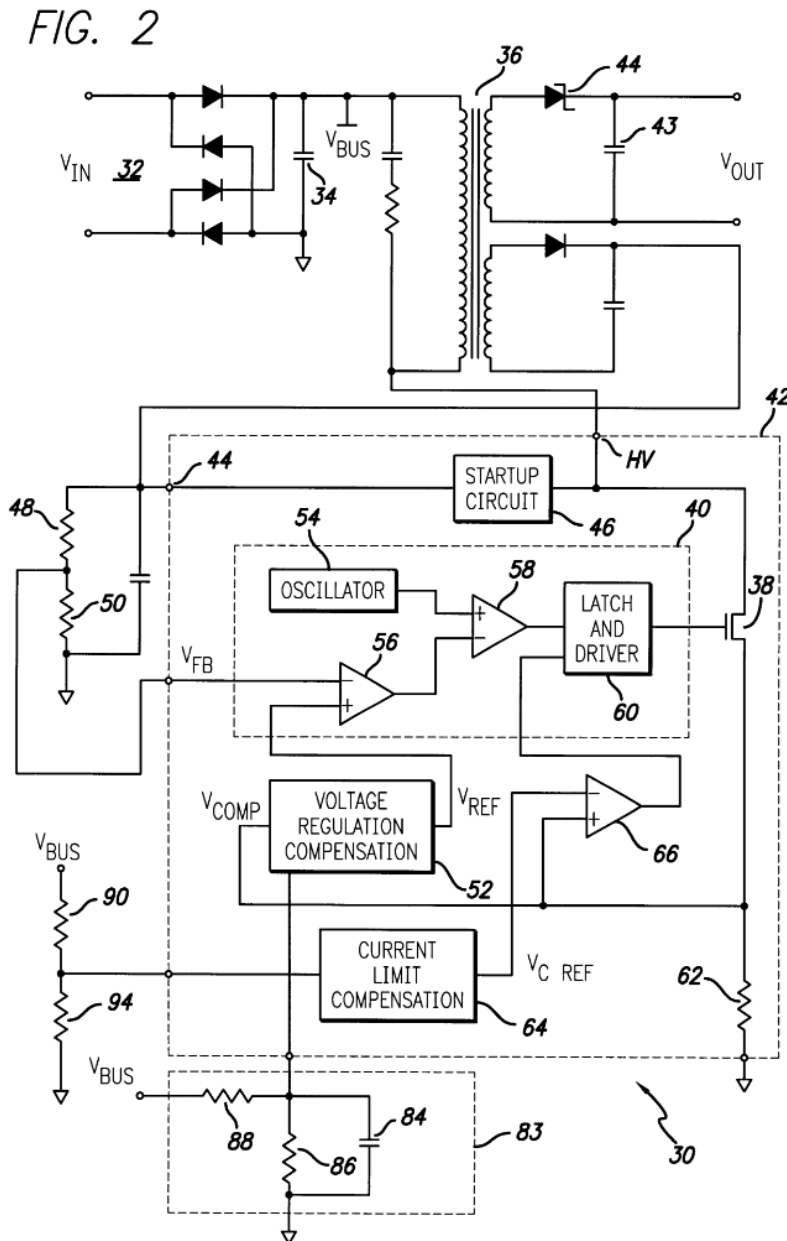


Figure 2 depicts a power supply using primary-side feedback control using voltage regulation compensation circuit 52. *Id.* at 2:25–2:27. The AC line voltage is converted to a DC bulk voltage by full-wave rectifier diode bridge

32. *Id.* at 2:27–2:28. Capacitor 34 filters the DC bulk voltage, and the primary winding of transformer 36 receives the DC bulk voltage. *Id.* at 2:28–2:30.

Regulator circuit 42 monitors and retrieves primary side information from transformer 36 and uses the information from the primary side to approximate the secondary side output current. *Id.* at 2:41–2:44. The approximation provides a constant regulated voltage output to switching power supply 30. *Id.* at 2:44–2:45.

Switching regulator circuit 40 is coupled to receive feedback signal V_{FB} and reference signal V_{REF} to provide a drive signal to the gate of power transistor 38. *Id.* at 2:53–2:55. Error amplifier 56 has one input to receive feedback signal V_{FB} , and a second input to receive reference signal V_{REF} from voltage regulation compensation circuit 52. *Id.* at 2:63–2:66. Voltage regulation compensation circuit 52 receives signal V_{COMP} , and determines reference signal V_{REF} by sensing the inductor current at the source of power transistor 38. *Id.* at 3:7–8, 3:15–16.

E. Challenged Claims

Claims 6, 15, and 24 are independent. Claims 11 and 12 depend from claim 6. Claim 28 depends from claim 24. Claims 6 and 24 are illustrative of the claimed subject matter and reproduced below.

6. A regulation circuit for use in a power supply, wherein the power supply converts an input voltage to an output voltage by switching an inductor current according to a switching transistor drive signal, the regulation circuit comprising:

a switching regulator coupled for receiving a first feedback signal and a variable reference signal to provide the switching transistor drive signal; and

a compensation circuit coupled for receiving a current reference signal representative of the inductor current for generating the variable reference signal.

Ex. 1001, 6:7–17.

24. A method of converting an input voltage to an output voltage in a power supply by switching an inductor current according to a switching transistor drive signal, comprising:

controlling the switching transistor drive signal in response to a feedback signal;

generating a variable reference signal from a compensation signal representative of the inductor current; and

adjusting the feedback signal in response to the variable reference signal.

Id. at 8:13–22.

III. ANALYSIS

A. *Principles of Law*

Petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail in its challenges, Petitioner must demonstrate by a preponderance of the evidence that the challenged claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

A claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described in a single prior art reference. *Verdegaal Bros., Inc. v. Union Oil. Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). The elements must be arranged as recited in the

challenged claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time of the invention to a person having ordinary skill in the art. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective evidence of non-obviousness, i.e., so-called secondary considerations such as commercial success, long felt but unsolved needs, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). The obviousness inquiry further requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)).

B. Level of Ordinary Skill in the Art

Petitioner states that a person having ordinary skill in the art of “the subject matter of the ’624 patent . . . would have had a bachelor’s degree or higher in electrical engineering with at least 3 years working experience in the design of electronic circuits, would be familiar with switching voltage regulator circuits and with the operation, design and fabrication of integrated circuits related to switching voltage regulators.” Pet. 14. Patent Owner states that a person having ordinary skill in the art “would have been

someone with at least a Master’s Degree in electrical engineering or a related field, or, alternatively, a Bachelor’s Degree in electrical engineering or a related field with at least two years of work experience in power electronics.” PO Resp. 3.

Although the parties formulate slightly differently their respective assessments of the skill level, neither party disputes directly the other’s assessment nor makes any arguments related to the assessments. *See generally* Pet.; PO Resp. The ’624 patent states its disclosure “relates in general to electronic circuits and, more particularly, to switching power supplies which convert an AC signal to a regulated DC signal.” Ex. 1001, 1:6–8. In view of the foregoing, we adopt Patent Owner’s formulation of the level of ordinary skill in the art. Further, this level of ordinary skill is reflected by the prior art of record. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art itself can reflect the appropriate level of ordinary skill in the art).

C. Claim Construction

We interpret claims of an unexpired patent using the broadest reasonable interpretation in light of the specification. *See* 37 C.F.R. § 42.100(b) (2017)²; *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under the broadest reasonable interpretation standard, claim terms generally are given their ordinary and customary meaning, as

² Our recently changed version of this Rule, which requires that we interpret claims in the same manner used in a civil action under 35 U.S.C. § 282(b), does not apply here because the Petition was filed before the effective date of the new Rule, November 13, 2018. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,344 (Oct. 11, 2018).

would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). The claims, however, ““should always be read in light of the specification and teachings in the underlying patent,”” and “[e]ven under the broadest reasonable interpretation, the Board’s construction ‘cannot be divorced from the specification and the record evidence.’” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (citations omitted). Further, any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the absence of such a definition, limitations are not to be read from the specification into the claims. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

We address below the parties’ disputes regarding the claim terms “variable reference signal” and “signal representative of the inductor current.” Construction of no additional terms is necessary for our analysis, and, therefore, we do not construe any additional terms. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy).

1. “variable reference signal”

Petitioner proposes construing “variable reference signal” as recited in each of independent claims 6, 15, and 24, as well as dependent claims 11 and 28, to mean “a variable signal that modifies the feedback loop to provide voltage regulation compensation.” Pet. 14–15. In our Decision on Institution, we adopted Petitioner’s construction of the term “variable reference signal” for purposes of that Decision. Dec. on Inst. 9.

After institution, Patent Owner contends that “‘variable reference signal’ should be construed as ‘a reference signal (i.e., a signal that is compared to a feedback signal to regulate the output) that can vary.’” PO Resp. 9. Patent Owner argues that Petitioner’s construction is “flawed[] because it allows any variable signal that ‘modifies the feedback loop’ to qualify as a reference signal.” *Id.* at 6. According to Patent Owner, “as used in the ’624 Patent, ‘reference signal’ has the same meaning as it has in the context of switching regulators in general, i.e., it is a signal that is **compared** to a feedback signal to regulate the output.” *Id.* at 5.

In determining the broadest reasonable interpretation of a claim term, we begin with the language of the claim itself. *In re Power Integrations, Inc.*, 884 F.3d 1370, 1376 (Fed. Cir. 2018) (quoting *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 457 F.3d 1293, 1301 (Fed. Cir. 2006)) (“[C]laim construction must begin with the words of the claims themselves.”); *In re NTP, Inc.*, 654 F.3d 1279, 1288 (Fed. Cir. 2011) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)) (“As with any claim construction analysis, we begin with the claim language.”). Patent Owner does not identify, and we are unable to discern, any limitations of the challenged claims requiring that the variable reference signal must be compared to the recited feedback signal. For instance, independent claim 6 merely recites “a compensation circuit . . . for generating the variable reference signal” and “a switching regulator coupled for receiving a first feedback signal and a variable reference signal.” Ex. 1001, 6:12–17. Claim 6, thus, requires only that the variable reference signal be generated by the compensation circuit and be received by the switching regulator. Claim 11, which depends from claim 6, further recites that the switching regulator of

claim 6 includes an amplifier with two distinct terminals, one of which is coupled to the variable reference signal. *Id.* at 6:48–50. This further limitation, however, does not require comparing the feedback signal to the variable reference signal. Indeed, claim 11 recites a comparator, but that comparator need not receive the variable reference signal as an input. *Id.* at 6:51–53. Further, independent claim 24 recites, “adjusting the feedback signal in response to the variable reference signal.” *Id.* at 8:21–22.

Although the adjustment recited in claim 24 must be made “in response to the variable reference signal,” the claim language does not require that the variable reference signal must be compared to the feedback signal.

Turning to the written description, Patent Owner asserts that the embodiments of the '624 patent “show[] exactly this comparison of the reference signal to the feedback signal. Reference signal V_{REF} is compared to feedback signal V_{FB} , with the output (i.e., error signal) being used to regulate output voltage V_{OUT} .” PO Resp. 6 (citing Ex. 1001, 2:61–3:6, Fig. 2). We agree with Patent Owner that the cited portions of the written description disclose comparing the variable reference signal to the feedback signal. *See, e.g.*, Ex. 1001, 2:58–66 (“Reference signal V_{REF} can be a fixed reference signal or a variable reference signal created by voltage regulation compensation circuit 52. . . . Error amplifier 56 has one input to receive feedback signal V_{FB} , and a second input to receive reference signal V_{REF} from voltage regulation compensation circuit 52.”). It is well established, however, that limitations not recited in the claims are not be read in from the written description, even where all disclosed embodiments include such an unclaimed limitation. *Flo Healthcare Solutions, LLC v. Kappos*, 697 F.3d

1367, 1375 (Fed. Cir. 2012) (citing *Silicon Graphics, Inc. v. ATI Techs., Inc.*, 607 F.3d 784, 792 (Fed. Cir. 2010)).

Other than competing declarant testimony, neither party has entered into the record extrinsic evidence, such as dictionary definitions or contemporaneous usage in the art, addressing the scope of a “variable reference signal.” Rather, Patent Owner asserts, “a signal is a reference signal because it is **compared** to another signal (in this case, it is compared to the feedback signal).” PO Resp. 6. Even if we were to accept *arguendo* that the ordinary and customary usage of the term “reference signal” requires comparison of the signal to another signal, Patent Owner, nevertheless, fails to identify intrinsic evidence establishing that the “variable reference signal” recited in the challenged claims must be compared to the feedback signal as opposed to some other signal. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (requiring that any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision).

Accordingly, we decline to construe the claimed “variable reference signal” as requiring comparison to the feedback signal, and instead maintain our construction as set forth in our Decision on Institution, namely that the variable reference signal recited in the challenged claims is “a variable signal that modifies the feedback loop to provide voltage regulation compensation.”³

³ To the extent there is a dispute regarding whether the broadest reasonable interpretation of “variable reference signal” includes modifying the feedback loop, we note that the parties do *not* dispute that the relevant prior art disclosures relied on by Petitioner include this feature, and, thus, such dispute has no bearing on our conclusions on patentability. *See, e.g.*, PO

2. “*signal representative of the inductor current*”

Independent claim 6 recites, “a current reference signal representative of the inductor current.” Ex. 1001, 6:15–16. Independent claims 15 and 24 each recite, “a compensation signal representative of the inductor current.” *Id.* at 7:13–14, 8:19–20. Although Petitioner did not seek our construction of “representative of the inductor current” in the Petition, the parties dispute the scope of this term at trial. PO Resp. 29; Reply 26.

After the parties’ submitted their substantive briefing in this proceeding, the United States District Court for the Northern District of California issued an Order adopting Petitioner’s proposed construction of this term in that litigation, namely that “the value of the current reference signal [compensation signal] represents a unique value of the inductor current.” Ex. 2005, 9:24–25. At oral hearing in this proceeding, Patent Owner conceded that we should similarly adopt the District Court’s construction in this proceeding. Tr. 59:14–60:5.

Accordingly, consistent with the United States District Court for the Northern District of California, we construe the term “representative of the inductor current” as recited in independent claims 6, 15, and 24 as meaning “the value of the current reference signal [compensation signal] represents a unique value of the inductor current.”

Resp. 9–17 (arguing that Bonte does not anticipate claim 6 for various reasons, but *not* disputing that the alleged variable reference signal Petitioner identifies modifies the feedback loop); Sur-Reply 7–10 (same).

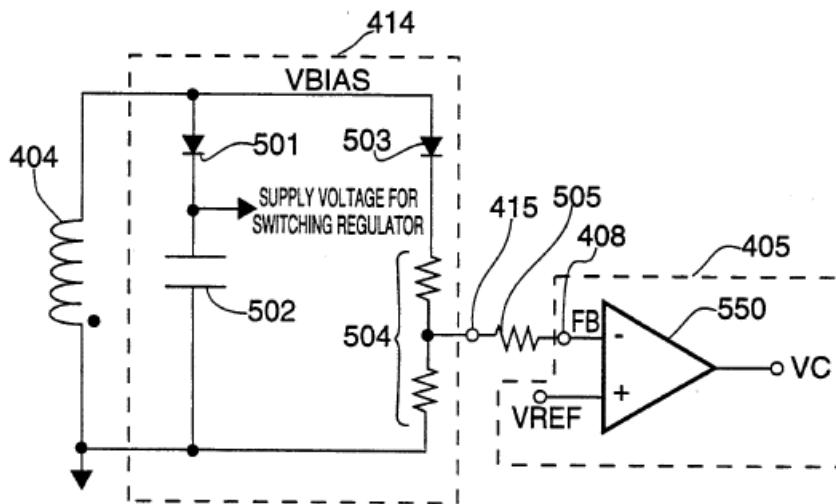
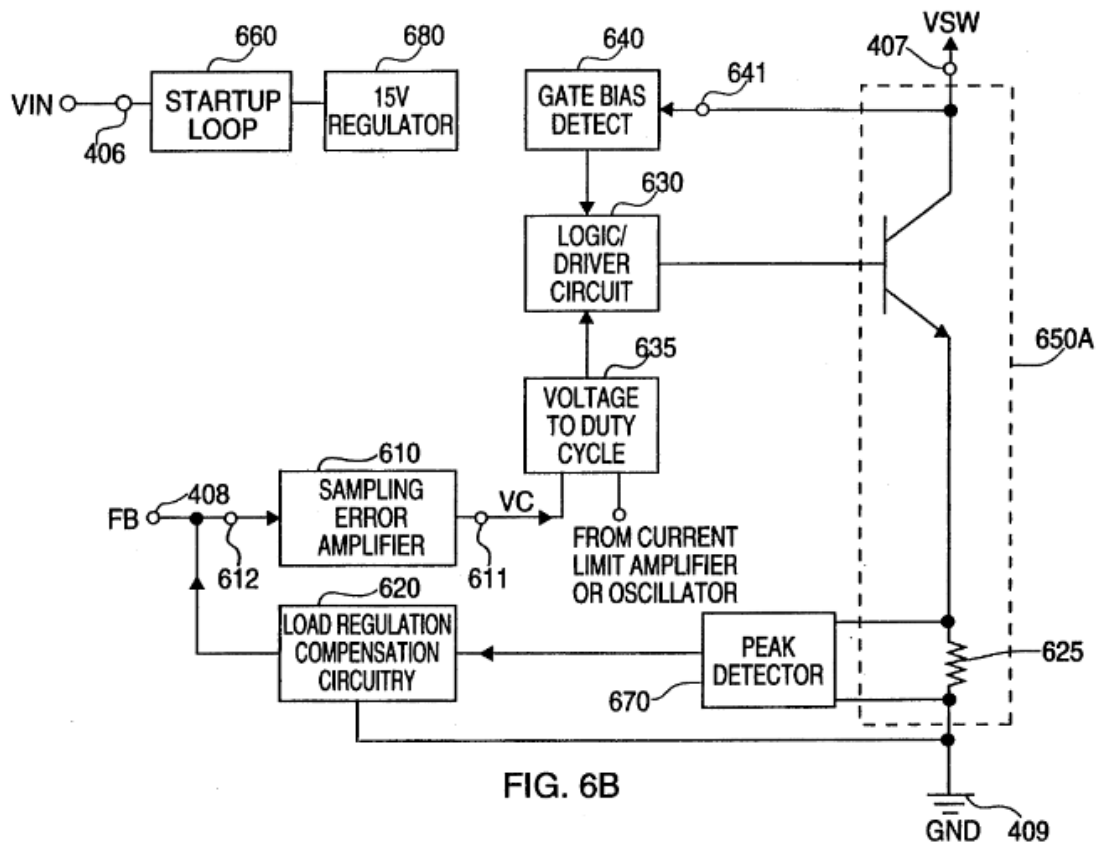


FIG. 5

Figure 5 depicts feedback circuit 414, and among other components, Figure 5 shows within feedback circuit 414 a “supply voltage for switching regulator” between diode 501 and capacitor 502. *Id.* at 9:41–44. Figure 5 further depicts diode 503, resistor divider network 504, and the output of feedback circuit 414 as output 415 taken from a tap point in resistor divider network 504. *Id.* at 9:23–25. Output 415 is provided to resistor 505, and the output thereof is provided to switching control regulator 405 at its terminal 408. *Id.* at 9:45–47. Switching control regulator 405 is shown in greater detail in Figures 6A–D, of which representative Figure 6B is reproduced below. *Id.* at 3:54–57.



Among other components, Figure 6B shows load regulation compensation circuit 620, peak detector circuit 670, and resistor 625. *Id.* at 10:37–48.

2. Bindra

Bindra is a magazine article that describes the Texas Instruments TPS5210, a DC-DC converter based on “a synchronous buck ripple regulator topology with a built-in hysteretic controller.” Ex. 1005, 33. The device enables voltage-regulator modules for processors. *Id.* Figure 1 of Bindra is reproduced below:

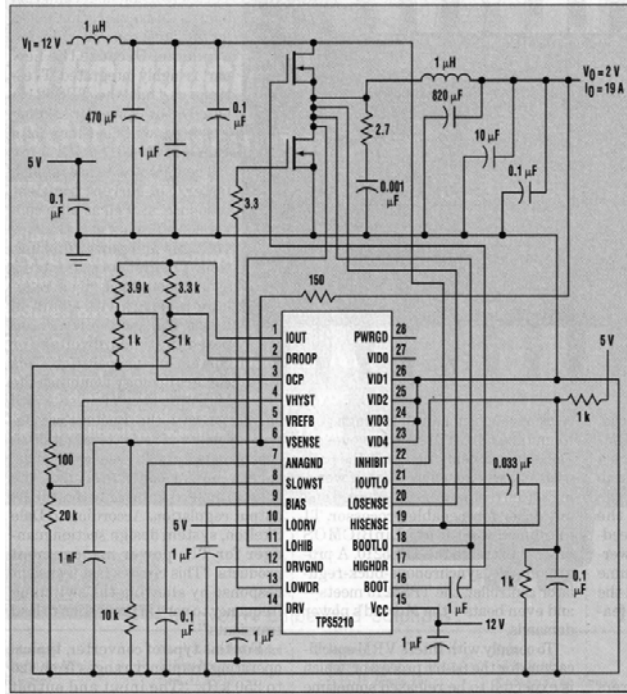


Figure 1 shows a representative schematic showing an embodiment of a DC-DC converter implemented with the TPS5210. *Id.* at 34. Figure 1 shows a 1 μ H inductor, a high-side MOSFET which is turned on and off to maintain the output voltage within a user-selectable hysteresis window (*id.*), and an I_{OUT} signal.

Bindra describes, “[t]he goal was to accomplish faster load-current transient response, as well as high conversion efficiency at both lower voltages and power dissipation.” *Id.* at 33. Bindra continues, “[i]n essence, the hysteretic power controller uses the output ripple as an error to control the output regulation.” *Id.* Figure 2 of Bindra is reproduced below.

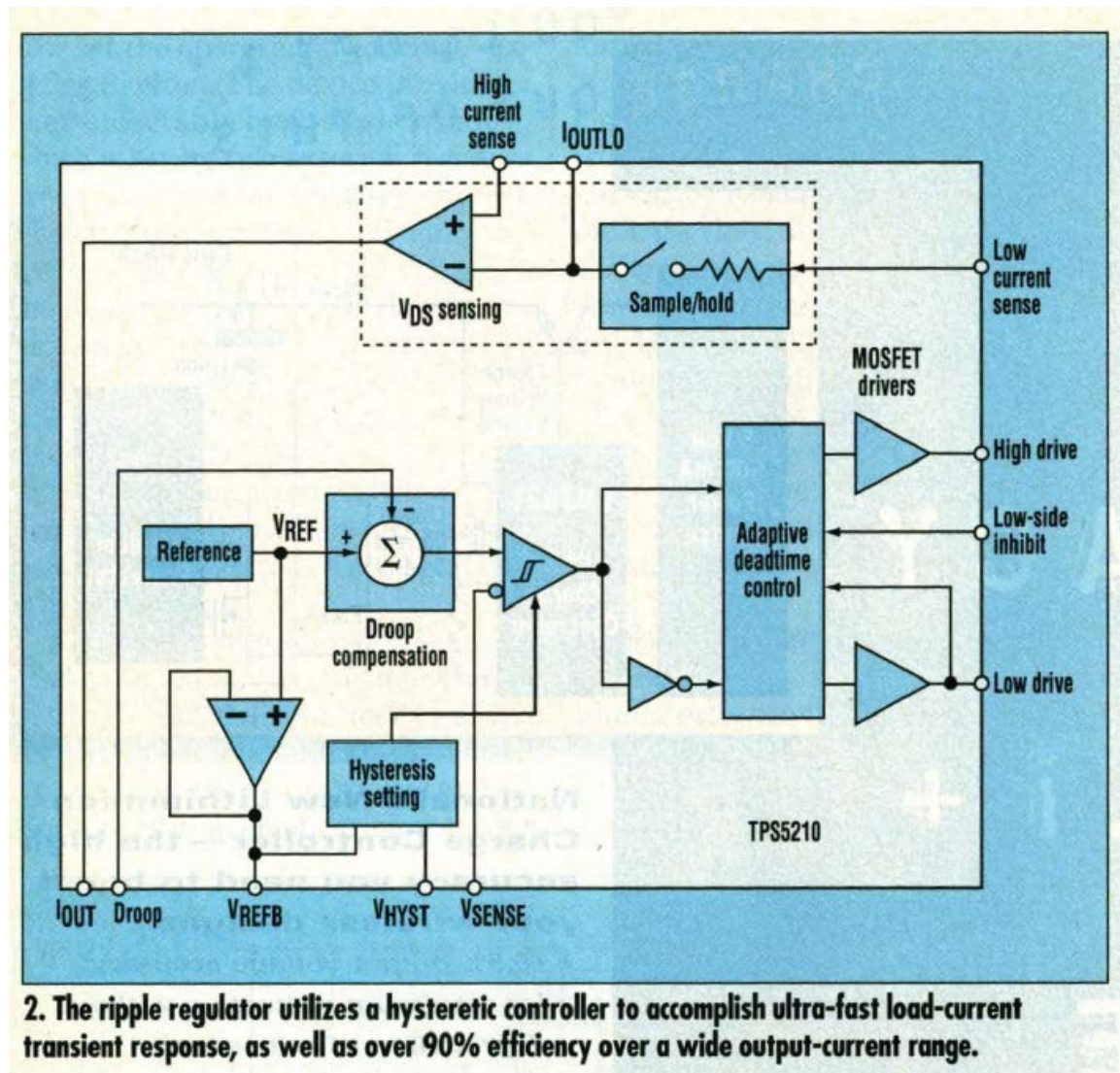
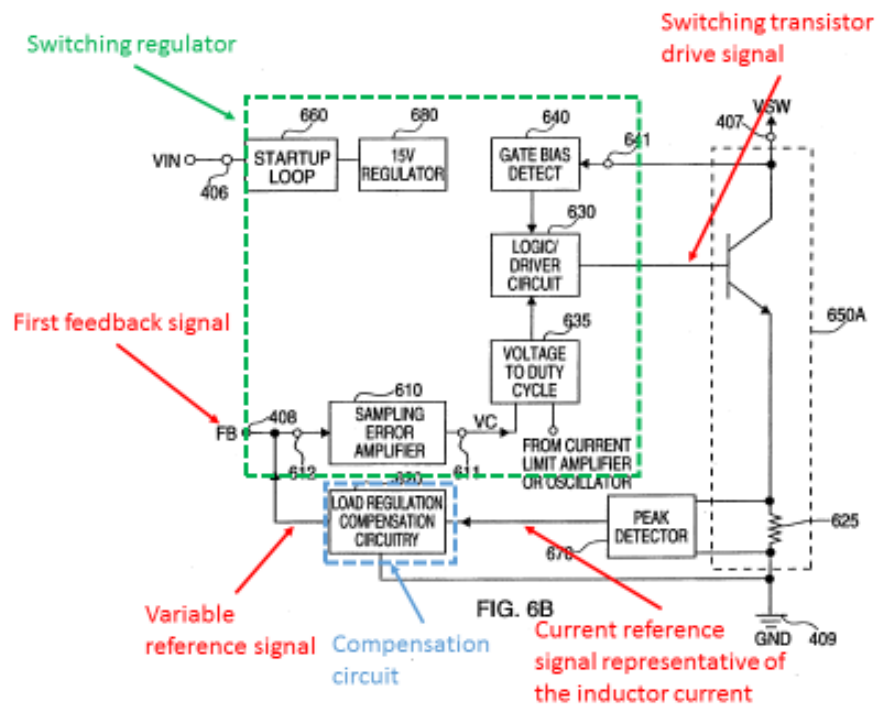


Figure 2 depicts the TPS5210, including two external resistors and a reference voltage that allow the user to set a hysteresis window. *Id.* at 34. Figure 2 further depicts the TPS5210's "droop compensation circuit." *Id.* According to Bindra, the droop compensation circuit regulates the output, V_{OUT} , within a two percent limit. *Id.* The droop compensation circuit uses a signal representative of the primary inductor current to adjust a variable reference signal in the voltage regulation loop to compensate for current dependent variances (*i.e.* droop) in the output voltage. *Id.*

E. Ground 1: Asserted Anticipation of Claims 6, 15, and 24 by Bonte

1. Claim 6

Independent claim 6 recites, in relevant part, “a switching regulator coupled for receiving a first feedback signal and a variable reference signal to provide the switching transistor drive signal.” Petitioner, relying on its declarant Dr. Szepesi, maps this limitation as follows: “Bonte discloses a switching regulator (e.g. a portion of the circuit within Fig. 4A, element 405) coupled for receiving a first feedback signal (“FB”) and a variable reference signal (see, e.g. Fig. 6B/6D output of “load regulation compensation circuitry” 620) to provide the switching transistor drive signal (output of “logic / driver” circuit 630). Pet. 23. Petitioner and Dr. Szepesi further annotate Figure 6B of Bonte to depict this mapping (*id.* at 24), and the annotated Figure 6B is reproduced below.



As described by Petitioner and can be seen in Petitioner's annotations to Figure 6B of Bonte, Petitioner relies on the input to sampling error amplifier 610 as meeting the claimed first feedback signal and variable reference signal recited in claim 6 because, according to Petitioner and Dr. Szepesi, "the input to sampling error amplifier 610 is a combination of the feedback signal and the output of the load regulation compensation circuit; this combination provides the described compensation to improve the accuracy of the voltage regulation." Pet. 22 (citing Ex. 1003 ¶¶ 66–69; Ex. 1004, 10:20–26).

Patent Owner contends that "[e]ven under Petitioner's construction of 'variable reference signal,' Petitioner has not shown that the alleged switching regulator is 'coupled for receiving a first feedback signal *and* a variable reference signal,' as required by claims 6 and 15." PO Resp. 12. Patent Owner elaborates, "Petitioner has failed to show that two separate signals are received by the switching regulator as claim 6 requires," because Patent Owner identifies "different portions of the same wire." *Id.* at 13–14. Thus, according to Patent Owner and its declarant Dr. Holberg, "what Petitioner alleges are two distinct signals in fact have the same voltage and virtually the same current." *Id.* at 13 (citing Ex. 2001 ¶ 35).

Implicit in Patent Owner's argument is an assertion that the scope of claim 6 requires that the claimed first feedback signal and variable reference signal must each be coupled separately to the claimed switching regulator. We decline to reach this claim construction argument because, even assuming *arguendo* that claim 6 broadly encompasses receiving the claimed first feedback signal and variable reference signal together on a single wire

coupled to the switching regulator, we find Petitioner's analysis of Bonte insufficient to meet this claim limitation.

Petitioner identifies Bonte's switching regulator circuit 405 as meeting the claimed switching regulator. Pet. 23. Petitioner further relies on the output of Bonte's load regulation compensation circuitry 620 as meeting the claimed variable reference signal. *Id.* Claim 6 requires the switching regulator (Bonte's switching regulator circuit 405) be "coupled for receiving" the variable reference signal (the output of Bonte's load regulation compensation circuitry 620). Contrary to the claim language, Bonte describes load regulation compensation circuitry 620 as a component within switching regulator circuit 405. Ex. 1004, 9:57–67. Specifically, Bonte states:

As an introduction to these and other unique circuits of switching voltage regulator control circuit 405, FIGS. 6A–6D provide illustrative simplified diagrams of various arrangements and interconnections of certain functional circuit blocks *within switching voltage regulator control circuit 405*. More particularly, FIGS. 6A–6D show block diagrams of four alternative embodiments of switching regulator control circuit 405 of FIGS. 4A and 4B, *each including* a sampling error amplifier circuit block 610, a *load regulation compensation circuit block 620*, ...

Id. (emphasis added). Bonte, thus, describes load regulation compensation circuit block 620 as "contained within" switching voltage regulator control circuit 405, as shown in block diagrams of four alternative embodiments (FIGS. 6A–6D) of switching regulator control circuit 405 of FIGS. 4A and 4B. *Id.*; *see also id.* at 10:37–48 ("In comparing FIG. 6A to FIG. 6B it is seen that load regulation compensation circuit 620 *can be incorporated into*

switching regulator control circuit 405 in various ways, as will become more apparent below.”) (emphasis added). Petitioner, therefore, identifies as the claimed “variable reference signal” a signal that Bonte describes as already contained within the asserted switching regulator. Accordingly, the asserted switching regulator cannot be “coupled for receiving” the asserted variable reference signal, as required by claim 6, because that signal (the output of load regulation compensation circuit block 620) is already within the asserted switching regulator (switching regulator control circuit 405).

Claim 6 further recites, “a compensation circuit coupled for receiving a current reference signal representative of the inductor current for generating the variable reference signal.” Ex. 1001, 6:15–17. Claim 6 thus requires that the compensation circuit generate the variable reference signal. Significantly, the compensation circuit, which generates the variable reference signal, is recited in the claim language as a distinct structure from the switching regulator, which is coupled for receiving the variable reference signal. Here too, Petitioner identifies Bonte’s load regulation compensation circuitry 620 as meeting the claimed compensation circuit (Pet. 24–25), but Bonte describes this circuitry as contained within switching regulator control circuit 405, in contravention of the claim language. Ex. 1004, 9:57–67, 10:37–48. Petitioner does not account for how the switching regulator would be coupled to the compensation circuit in order to receive the variable reference signal if the switching regulator contains the compensation circuit (as Bonte describes) and, thus, already contains the variable reference signal where generated.

In some instances, Petitioner alters its identification of the claimed switching regulator to encompass a limited portion of Bonte’s switching

regulator control circuit 405. For example, Petitioner's annotated Figure 6B reproduced above includes a green dotted line labeled "switching regulator" and encompassing only a limited portion of switching regulator control circuit 405. Pet. 24; *see also id.* at 31 ("In annotated Figure 6B, Bonte shows the switching regulator (green dashed box) and the first feedback signal."). Petitioner's inconsistent identification of the claimed switching regulator runs afoul of the requirement in 37 C.F.R. § 42.104(a)(4) that "[t]he petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon." Moreover, Bonte does not describe the portion of switching regulator control circuit 405 that Petitioner selects as a discrete structure separate from the portion Petitioner excludes. *See generally* Ex. 1004. Arbitrarily excluding portions of Bonte's switching regulator control circuit 405 in this manner is insufficient to establish anticipation, which requires that the claim elements must be arranged as recited in the challenged claim. *See, e.g., In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

Finally, Petitioner advances an alternative theory for anticipation of claim 6. Pet. 33. Petitioner identifies the following passage in Bonte:

"A resistor in series between feedback circuit 414 and feedback terminal 408 (see resistor 505 of FIG. 5) is provided to generate a voltage drop that attenuates the feedback signal in proportion to load current. The voltage drop can be viewed as creating a linear increase in the effective reference voltage with increasing load current. This translates to a linear increase in output voltage with increasing load current."

Id. (emphasis omitted) (citing Ex. 1004, 12:48–56). According to Petitioner, this passage describes that, although error amplifier 505 within switching

regulator control circuit 405 is depicted as “attenuating the feedback signal while keeping VREF constant, a designer could instead increase the reference voltage (*i.e.*, vary VREF) to achieve the same result.” Reply 11–12. Even if we were to accept this contention, Petitioner’s alternative theory continues to rely upon the output of load regulation compensation circuit block 620 as meeting the claimed variable reference signal, despite the fact that it is already within switching regulator control circuit 405 and, thus, cannot be “coupled for receiving” by the switching regulator control circuit 405, as required.

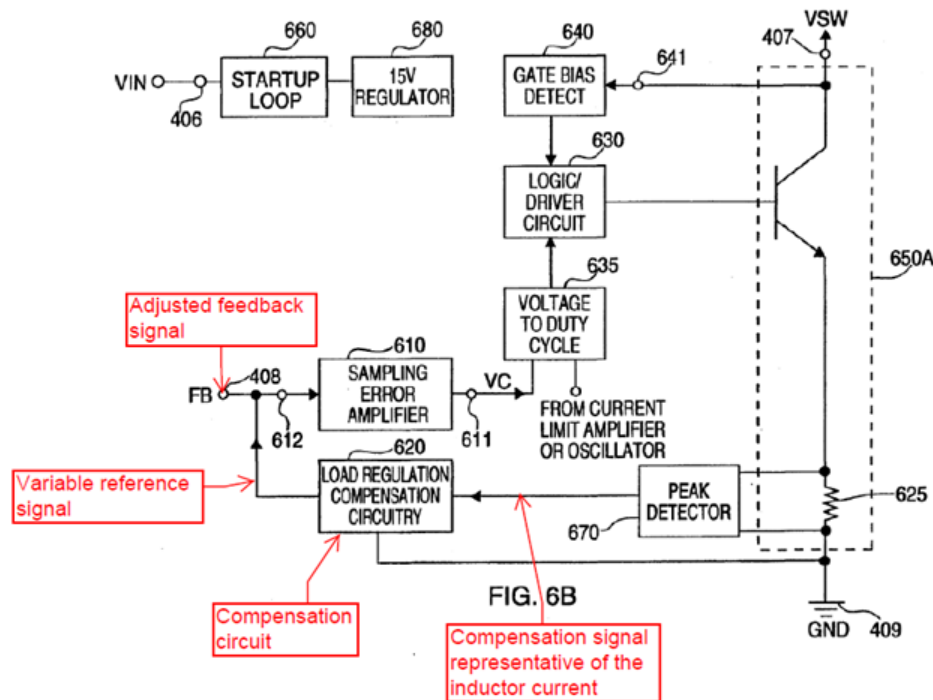
Accordingly, for the foregoing reasons, we find Petitioner has failed to show by a preponderance of the evidence that Bonte anticipates claim 6.

2. *Claim 15*

Claim 15 recites, in relevant part, “a switching regulator coupled for receiving a feedback signal to provide the switching transistor drive signal.” Ex. 1001, 7:10–11. Claim 15 further recites, “a compensation circuit coupled for receiving a compensation signal representative of the inductor current for generating a variable reference signal to adjust the feedback signal to the switching regulator.” *Id.* at 7:12–15.

Petitioner’s analysis, as supported by the Szepesi Declaration, demonstrates where Petitioner contends each element of claim 15 is disclosed in Bonte. Pet. 26–27, 33–34 (citing Ex. 1003 ¶¶ 81–89). With regard to the claimed switching regulator and claimed compensation circuit, Petitioner and Dr. Szepesi refer back to their identification of corresponding structures in claim 6. *Id.* at 26–27. In particular, Petitioner identifies Bonte’s switching regulator control circuit 405 as meeting the claimed switching regulator and Bonte’s load regulation compensation circuitry 620

as meeting the claimed compensation circuit. Pet. 26–27, 33–34 (citing Ex. 1003 ¶¶ 81–89). Petitioner and Dr. Szepesi further annotate Figure 6B of Bonte to depict their analysis of claim 15 (*id.* at 27), and the annotated Figure 6B is reproduced below.



As described by Petitioner and can be seen in Petitioner’s annotations to Figure 6B of Bonte, Petitioner identifies the output of the load regulation compensation circuitry 620 as meeting the claimed variable reference signal, emphasizing that this output is used to “adjust[] the input to sampling error amplifier 610 to compensate for errors in the feedback signal created by parasitic voltage drops’ in the output.” Pet. 33–34 (citing Ex. 1004, 10:20–26).

Patent Owner does not address claim 15 separately from its arguments addressing claim 6, as discussed above. PO Response 9–17.

Unlike claim 6, independent claim 15 does not require that the switching regulator be “coupled for receiving” the variable reference signal.

Compare Ex. 1001, 6:12–14 *with id.* at 7:10–11. Rather, claim 15 requires only that the switching regulator be “coupled for receiving a feedback signal.” *Id.* at 7:10–11. Having reviewed the cited portions of Bonte, we agree with Petitioner that Bonte discloses the elements of claim 15. Pet. 26–27, 33–34; Ex. 1004, 9:57–67, 10:37–48. In particular, we observe that, although the asserted compensation circuit (Bonte’s load regulation compensation circuitry 620) is contained within the asserted switching regulator (Bonte’s switching regulator control circuit 405), such a configuration does not conflict with the language of claim 15. This is because the variable reference signal of claim 15 is used only “to adjust the feedback signal to the switching regulator” and need not be received by the switching regulator. Here, we agree with Petitioner that Bonte discloses using the output of the load regulation compensation circuitry 620 (variable reference signal) to adjust the feedback signal FB received at feedback terminal 408. Ex. 1004, 10:20–26 (“Load regulation compensation circuit 620, in conjunction with a resistor connected in series between feedback terminal 408 and the source of the feedback signal (e.g. feedback circuit 414), adjusts the input to sampling error amplifier 610 to compensate for errors in the feedback signal created by parasitic voltage drops in the output circuitry of the switching regulator circuit.”).

Accordingly, for the foregoing reasons, we find Petitioner has shown by a preponderance of the evidence that Bonte anticipates claim 15.

3. *Claim 24*

Independent method claim 24 recites, in relevant part, “generating a variable reference signal from a compensation signal representative of the

inductor current; and adjusting the feedback signal in response to the variable reference signal.” Ex. 1001, 8:19–22.

Petitioner’s analysis, as supported by the Szepesi Declaration, demonstrates where Petitioner contends each element of claim 24 is disclosed in Bonte. Pet. 27–31, 34 (citing Ex. 1003 ¶¶ 70–80). With regard to the claimed variable reference signal, Petitioner and Dr. Szepesi identify Bonte’s output of load regulation compensation circuit 620 as meeting the claimed signal. *Id.* at 29, 34 (citing Ex. 1003 ¶¶ 70–80). Similarly to claim 15, Petitioner further contends that Bonte describes using the output of load regulation compensation circuit 620 (variable reference signal) to adjust the feedback signal (FB). *Id.* at 30–31, 34 (citing Ex. 1004, 10:20–26, Ex. 1003 ¶¶ 70–80).

Patent Owner does not assert any arguments for claim 24 beyond those addressing claim 6, as discussed above. PO Response 9–17.

Method claim 24 requires generating a variable reference signal from a compensation signal representative of the inductor current and adjusting the feedback signal in response to the variable reference signal. Having reviewed the cited portions of Bonte, we agree with Petitioner that Bonte discloses the elements of claim 24. Pet. 27–31, 34 (citing Ex. 1003 ¶¶ 70–80); Ex. 1004, 9:57–67, 10:20–26, 10:37–48. In particular, we agree with Petitioner that Bonte discloses using the output of the load regulation compensation circuitry 620 (variable reference signal) to adjust the feedback signal FB received at feedback terminal 408. Ex. 1004, 10:20–26 (“Load regulation compensation circuit 620, in conjunction with a resistor connected in series between feedback terminal 408 and the source of the feedback signal (e.g. feedback circuit 414), adjusts the input to sampling

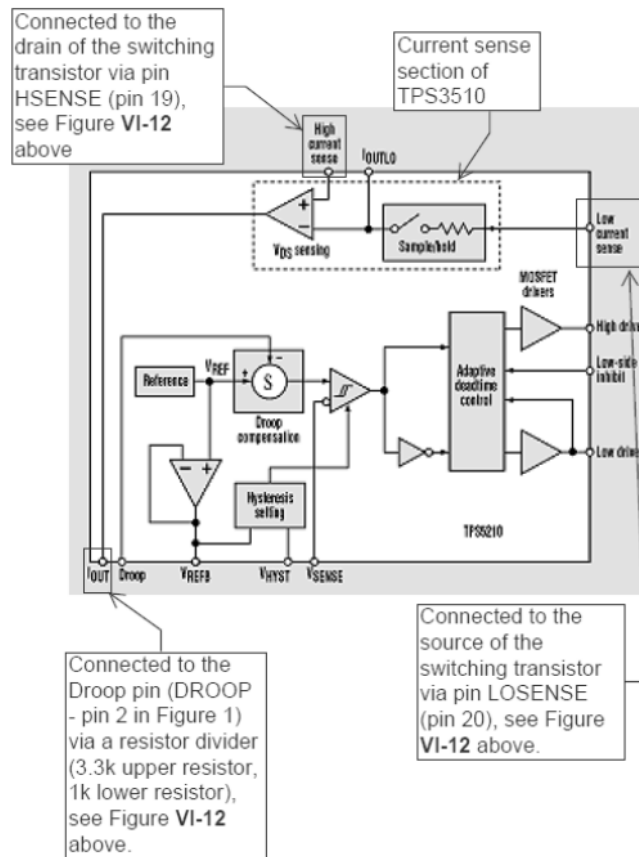
error amplifier 610 to compensate for errors in the feedback signal created by parasitic voltage drops in the output circuitry of the switching regulator circuit.”).

Accordingly, for the foregoing reasons, we find Petitioner has shown by a preponderance of the evidence that Bonte anticipates claim 24.

F. Ground 2: Asserted Obviousness of Claims 11 and 12 by Bonte
Claims 11 and 12 depend ultimately from claim 6. Ex. 1001, 6:46–62. Petitioner’s analysis of claims 11 and 12 maintains its reliance on the output of Bonte’s load regulation compensation circuit 620 as meeting the variable reference signal recited in claim 6. Pet. 34–36, 38 (referring back to Petitioner’s analysis of claim 6). Petitioner’s analysis of claims 11 and 12 does not repair the deficiencies of its analysis of claim 6, discussed above. *See id.* Accordingly, for the same reasons discussed in the context of claim 6, we find Petitioner has failed to show by a preponderance of the evidence that Bonte renders obvious claims 11 and 12.

G. Ground 3: Asserted Anticipation of Claim 6 by Bindra
Claim 6 recites: “a compensation circuit coupled for receiving a current reference signal representative of the inductor current for generating the variable reference signal.” Ex. 1001, 6:15–17. The parties dispute whether Bindra discloses this limitation. *Compare* PO Resp. 29 (arguing that Bindra does not disclose a “signal representative of the inductor current”) *with* Reply 22–23 (disputing Patent Owner’s assertions regarding whether Bindra discloses a “signal representative of the inductor current”).

Petitioner contends that I_{OUT} as shown in Figures 1 and 2 of Bindra “is a current reference signal representative of the inductor current.” Pet. 49, 50. Petitioner cites paragraphs 122 and 123 of Dr. Szepesi’s declaration to



Id. at ¶ 124.

Dr. Szepesi's annotated Figure 2 notes that the "current sense section of TPS[52]10" is configured such that the drain terminal of the switching transistor (see Dr. Szepesi's annotated Figure 1) is coupled to the non-inverting terminal of the unit labeled " V_{DS} sensing" whereas the inverting terminal is coupled to the "source terminal of the switching transistor." Further, this figure notes that I_{OUT} is connected to the Droop signal. See Dr. Szepesi's annotated Figure 1.

With reference to these annotated figures, Dr. Szepesi states:

124. The voltage on the "IOUT" pin (pin 1) is generated by a current sense circuit which senses the voltage drop across the switching transistor of the synchronous buck converter (see Figure VI-12 above and VI-13 below) comprising Sample/Hold

circuit and an amplifier marked as “ V_{DS} sensing” (see Figure VI-13 below).

125. The current sense circuit (current sense section in Figure VI-13 above) samples and amplifies the voltage drop on the MOSFET switching transistor by sensing the difference between its drain and source voltages. *This voltage drop is representative of the current flowing through the switching transistor during its on-time, which is representative of the inductor current of the buck converter during the on-time of the switching transistor. Hence the IOUT (or I_{OUT}) signal generated by the current sense section of the TPS5210 is representative of the inductor current.* Because the IOUT signal (voltage) is coupled to the droop compensation circuit’s input (DROOP or Droop) via a resistive divider (see Figure VI-12 above), the DROOP pin (Droop in Figure 2) is coupled for receiving a current reference signal – the resistor divided voltage of the voltage on IOUT pin in Figure 1 (corresponding to the IOUT terminal in Figure 2) – which is representative of the inductor current, for generating the variable reference signal at the output of summing circuit Σ , coupled to the non-inverting input of the hysteretic comparator.

Ex. 1003 ¶¶ 124–125 (emphasis added).

Patent Owner contends that Bindra does not disclose a signal representative of the inductor current under either the construction we adopt above or Dr. Szepesi’s understanding. PO Resp. 29. According to Patent Owner, Dr. Szepesi testified that the meaning of one signal being representative of another is: “for a particular value of one signal, there is a unique value for the other signal.” *Id.* 29 (citing Ex. 2003, 65–66). Patent Owner asserts, “Petitioner’s theory that I_{OUT} is representative of the inductor current only holds true if [the current flowing through the switching transistor,] I_{DS} [,] is also representative of the inductor current.” *Id.* at 33. Patent Owner continues, however, that “Bindra does not teach that there is a ‘unique value’ of the inductor current for a given I_{DS} ” because I_{DS} is

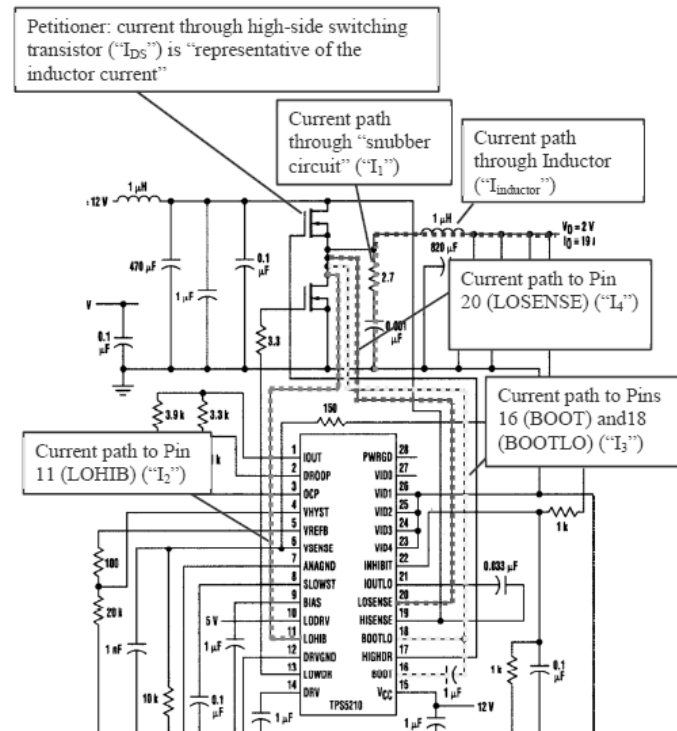
composed of several different currents in addition to the inductor current and because an ordinarily skilled artisan would not know the contribution of each of the additional currents that compose I_{DS} . *Id.* at 35.

We construed above the claim term “representative of the inductor current” as meaning “the value of the current reference signal [compensation signal] represents a unique value of the inductor current.” In light of our construction—which originates as Petitioner’s own position in the co-pending district court litigation—Petitioner must show that Bindra discloses that the value of I_{OUT} (the alleged current reference signal) represents a unique value of the inductor current. For the following reasons, we find Petitioner fails to carry this burden.

Petitioner relies on Dr. Szepesi’s analysis of I_{OUT} to support its contention that the value of I_{OUT} is representative of the inductor current. Pet. 50 (citing Ex. 1003). According to Dr. Szepesi, I_{OUT} is representative of the inductor current because it is generated based on the voltage drop across the switching transistor, V_{DS} , and V_{DS} “is representative of the current flowing through the switching transistor during its on-time, which [in turn] is representative of the inductor current of the buck converter during the on-time of the switching transistor.” Ex. 1003 ¶ 125. We disagree.

Even assuming that Petitioner is correct that I_{OUT} is generated based on the voltage drop across the switching transistor, V_{DS} , which is representative of the current flowing through the switching transistor, I_{DS} , Petitioner fails to show that Bindra discloses that I_{OUT} (or either V_{DS} or I_{DS}) is representative of the inductor current. As Patent Owner correctly points out, the current flowing through the switching transistor, I_{DS} , during its on-time does not solely consist of the inductor current. PO Resp. 34–35.

Instead, the current flowing through the switching transistor consists of the inductor current and “at least *four additional currents.*” *Id.* at 35. Patent Owner’s annotated Figure 1 is reproduced below:



Patent Owner’s annotated Figure 1 shows five current paths that branch out from the switching transistor: (1) a current path through “snubber circuit,” (2) a current path through the inductor, (3) a current path to the LOSENSE signal (pin 20), (4) a current path to the BOOT and BOOTLO signals (pins 16 and 18), and (5) a current path to the LOHIB signal (pin 11). PO Resp. 34–35. As Patent Owner correctly notes, the current flow through the switching transistor must be equal to the sum of the currents through each of these five current paths, assuming that the low-side switch is off. *Id.* at 35.

In its Reply, Petitioner argues that, if the inductor current differs from I_{OUT} as Patent Owner contends, such a difference would render Bindra

inoperative. Reply 22–24. Petitioner argues that Bindra’s device uses I_{OUT} to regulate the output to compensate for droops. *Id.* Thus, according to Petitioner, if I_{OUT} were not representative of the inductor current, the droop compensation would not work. *Id.* Patent Owner responds that it does not argue that I_{OUT} and the inductor current are entirely unrelated, but instead argues that I_{OUT} does not satisfy the limitation “a current reference signal representative of the inductor current,” as we construed above. Sur-Reply 16. We agree.

We are not persuaded that the droop compensation feature becomes inoperative simply because I_{OUT} consists of other currents in addition to the inductor current. Even assuming that Petitioner is correct that a variable voltage, which is the sum of the I_{OUT} signal and a fixed reference voltage (see Reply 23–24), is used to compensate for the droop, I_{OUT} is still influenced by the inductor current, in addition to the other currents. In other words, a droop in the inductor current would cause I_{OUT} to decrease, even if I_{OUT} is determined by other currents in addition to the inductor current. For this reason, we find the droop compensation circuit is still be able to function as intended.

Thus, even if we assume that I_{OUT} is generated from the voltage drop across the switching transistor, V_{DS} , which is representative of the current flow through the transistor, I_{DS} , Petitioner must show that Bindra discloses that I_{DS} is representative of the inductor current. Petitioner, however, does not account for the additional current paths that branch out from the switching transistor. Without a disclosure from Bindra that would enable an ordinarily skilled artisan to determine the values of the current flows at the five paths that branch out of the switching transistor, we are unable to

discern how one of ordinary skill would determine whether the value of I_{DS} represents a unique value of the inductor current, without resorting to information external to Bindra. This deficiency applies to I_{OUT} also because, according to Petitioner, I_{OUT} is generated from V_{DS} , which is representative of I_{DS} .

Dr. Szepesi's testimony is unequivocal regarding Bindra's deficiency with regards to the additional currents. Ex. 2003, 117: 21–119:3. During Dr. Szepesi's deposition, Patent Owner asked: "And Bindra doesn't say how much current flows through the snubber circuit, does it?" Dr. Szepesi responded: "No, but a POSITA can easily make a simulation or a calculation – simulation is probably easier – and figure it out." Patent Owner also asked: "Does anything in Bindra tell you whether the amount of current flowing into pin 18 and pin 11 is constant?" Dr. Szepesi responded: "There is nothing – in Bindra, there is nothing about the value of those currents and whether they are constant or not." Dr. Szepesi added that "a POSITA could look at the TPS5210 datasheet, and they'll be able to see the value of those currents. . . . And so from that, a POSITA would be able to figure out whether those currents are substantially constant or changing." *Id.*

Dr. Szepesi's testimony confirms that an ordinarily skilled artisan would need to look beyond Bindra's disclosure to determine whether I_{OUT} is representative of the inductor current. Specifically, Dr. Szepesi confirms that an ordinarily skilled artisan would need to consult a datasheet in addition to the Bindra reference to determine the values of the currents from which I_{OUT} is generated.⁴ *Id.* at 118:23–119:3. Thus, even though

⁴ In support of its Reply, Petitioner entered the TPS5210 datasheet in the record of this proceeding. Ex. 1023. Petitioner, however, did not rely on the

Dr. Szepesi argues that an ordinarily skilled artisan would be able to make a simulation or a calculation to figure out the current through the snubber circuit (*id.* at 117; *see also* Reply 25 (arguing that an ordinarily skilled artisan would have been able to “easily make a simulation or a calculation” to figure out how much current flows through the various currents that compose I_{DS})), he concedes that Bindra itself does not provide sufficient information to make the necessary simulation or calculation and would need to turn to additional information sources, such as the TPS5210 datasheet. *See, e.g.*, Ex 1019 ¶ 81 (citing Ex. 2003, 116:15–119:20) (Dr. Szepesi declaring, “I testified at my deposition that, in my opinion and as a POSITA would have known, these errors are very small to negligible and a POSITA would have been able to ascertain the errors by looking at the datasheet of the TPS5210 integrated controller circuit used by Bindra’s buck regulator); *see also id.* at ¶¶ 82–86; Reply 25 (arguing that, according to Dr. Szepesi a POSITA could ascertain how much current flows in these additional current paths by relying on the TPS5210 datasheet to “figure it out.”). Petitioner and Dr. Szepesi, thus, concede that an ordinarily skilled artisan would additionally need to know the configuration of the electrical components included in the TPS5210 chip to be able to determine the currents flowing through the additional current paths branching out from the switching transistor.

Petitioner also argues that an ordinarily skilled artisan upon reading Bindra would have concluded that the currents that compose I_{DS} are

datasheet when formulating this ground in the Petition. Accordingly, we decline Petitioner’s invitation to extend the asserted ground of anticipation based on Bindra alone to encompass Exhibit 1023.

negligible or pretty close to negligible, with the exception of the inductor current. Reply 24 (citing Ex. 2003, 118:1–7). Here too, however, Petitioner and Dr. Szepesi reach beyond Bindra’s disclosure to support this assertion. Reply 25 (arguing that, according to Dr. Szepesi a POSITA could ascertain how much current flows in these additional current paths by relying on the TPS5210 datasheet to “figure it out.”); *see also*, Ex 1019 ¶ 81 (citing Ex. 2003 116:15–119:20) (Dr. Szepesi declaring, “I testified at my deposition that, in my opinion and as a POSITA would have known, these errors are very small to negligible and a POSITA would have been able to ascertain the errors by looking at the datasheet of the TPS5210 integrated controller circuit used by Bindra’s buck regulator); *id.* at ¶¶ 82–86. Petitioner and Dr. Szepesi, thus, concede, that an ordinarily skilled artisan would additionally need to know the configuration of the electrical components included in the TPS5210 chip to be able to determine the currents flowing through the additional current paths branching out from the switching transistor.

For the foregoing reasons, we find Bindra’s disclosure, standing alone, does not sufficiently support a finding that I_{DS} is “representative of the inductor current,” as construed above, because the current, I_{DS} , flowing through the switching transistor consists of several currents in addition to the inductor current. That is, based on Petitioner and Dr. Szepesi’s reliance on information beyond the disclosure of Bindra such as the TPS5210 datasheet, we find Bindra, standing alone, does not adequately disclose that I_{DS} represents a unique value of the inductor current.

Accordingly, we determine Petitioner has failed to show by a preponderance of the evidence that claim 6 is anticipated by Bindra.

H. Ground 4: Asserted Obviousness of Claims 15, 24, and 28 by Bindra and Bonte

Claim 15 recites, in relevant part, “a compensation signal representative of the inductor current.” Ex. 1001, 7:13–14. Petitioner’s analysis of claim 15 maintains its reliance on Bindra’s value of I_{OUT} as meeting the signal representative of the inductor current. Pet. 53 (referring back to Petitioner’s analysis of claim 6). Petitioner’s analysis of claim 15 does not repair the deficiencies of its analysis of claim 6, discussed above. *See id.* Accordingly, for the same reasons discussed in the context of claim 6, we find Petitioner has failed to show by a preponderance of the evidence that Bindra renders obvious claim 15.

Claim 24 recites, in relevant part, “a compensation signal representative of the inductor current.” Ex. 1001, 8:19–20. Petitioner’s analysis of claim 24 maintains its reliance on Bindra’s value of I_{OUT} as meeting the signal representative of the inductor current. Pet. 54 (referring back to Petitioner’s analysis of claim 6), 55 (referring back to Petitioner’s analysis of claim 24). Petitioner’s analyses of claim 24 and its dependent claim 28 do not repair the deficiencies of its analysis of claim 6, discussed above. *See id.* Accordingly, for the same reasons discussed in the context of claim 6, we find Petitioner has failed to show by a preponderance of the evidence that Bindra renders obvious claim 24 and its dependent claim 28.

IV. MOTION TO STRIKE

Patent Owner moves to strike eleven exhibits (namely, Exs. 1023, 1024, 1026–1034) submitted by Petitioner in support of its Reply along with pages 22–25, and 28 of the Reply and paragraphs 28, 30, 71–74, 83–93, and 103 of the Szepesi Supplemental Declaration. Paper 23, 13. These exhibits,

arguments, and testimony were submitted by Petitioner specifically in support of its Grounds 2–4, as enumerated above. We dismiss as moot Patent Owner’s motion because even without striking these exhibits, arguments, and testimony, we determined above that Petitioner failed to show by a preponderance of the evidence that claims 6, 11, 12, 15, 24, and 28 were anticipated or rendered obvious as alleged in Grounds 2–4.

V. CONCLUSION

Petitioner has shown by a preponderance of the evidence that claims 15 and 24 are anticipated by Bonte. Petitioner, however, has failed to carry its burden on its remaining challenges to claims 6, 11, 12, 15, 24, and 28.

VI. ORDER

It is, therefore,

ORDERED that claims 15 and 24 of the ’624 patent are unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Strike is *dismissed as moot*; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2017-01907
Patent 6,333,624 B1

PETITIONER:

Neil A. Warren
John C. Phillips
Andrew Pearson
FISH & RICHARDSON PC
warren@fr.com
phillips@fr.com
pearson@fr.com

PATENT OWNER:

Roger Fulghum
Brian W. Oaks
Brett J. Thompsen
Nick Schuneman
Jennifer Nall
Seth Lindner
BAKER BOTTS LLP
roger.fulghum@bakerbotts.com
brian.oaks@bakerbotts.com
brett.thompsen@bakerbotts.com
nick.schuneman@bakerbotts.com
jennifer.nall@bakerbotts.com
seth.lindner@bakerbotts.com