

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

ADVANCED CODING TECHNOLOGIES, LLC,
Patent Owner.

IPR2024-00062
Patent 6,845,128 B2

Before BART A. GERSTENBLITH, NATHAN A. ENGELS, and
RUSSELL E. CASS, *Administrative Patent Judges*.

ENGELS, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. §314

I. INTRODUCTION

Samsung Electronics Co., Ltd. (“Petitioner”) filed a Petition (Paper 2 (“Pet.”)), seeking *inter partes* review of claims 1–6 and 8 (the “challenged claims”) of U.S. Patent No. 6,845,128 B2 (Ex. 1001 (“the ’128 patent”)). See Pet. 1. Advanced Coding Technologies, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

With authorization from the Board (Paper 8), Petitioner also filed a Preliminary Reply to Patent Owner’s Preliminary Response. Paper 9 (“Prelim. Reply”). And Patent Owner filed a Preliminary Sur-Reply to Petitioner’s Preliminary Reply.¹ Paper 10 (“Prelim. Sur-Reply”).

Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); see 37 C.F.R. § 42.108. Upon consideration of the evidence currently of record, we conclude that the information presented does not show a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one challenged claim of the ’128 patent.

A. Related Matters

The parties indicate that the ’128 patent is the subject of *Advanced Coding Technologies LLC v. Samsung Electronics Co.*, 2:22-cv-00499-JRG

¹ Patent Owner was authorized to file a preliminary sur-reply “of not more than seven pages.” Paper 8. Patent Owner’s Preliminary Sur-Reply is eight pages. Accordingly, we disregard the eighth page of the Preliminary Sur-Reply.

(E.D. Tex.) and *Coding Technologies LLC v. Samsung Electronics Co.*,
2:22-cv-00501-JRG (E.D. Tex.). Pet. 99; Paper 5, 2.

B. Real Parties-in-Interest

Petitioner identifies itself and Samsung Electronics America, Inc. as real parties-in-interest. Pet. 99. Patent Owner identifies itself as the real party-in-interest. Paper 5, 2.

C. Challenged Claims

Petitioner challenges claims 1–6 and 8 of the '128 patent. Pet. 1. Claims 1, 4, 5, and 8 are independent claims. Claim 1 is illustrative of the challenged claims and is reproduced below with Petitioner's labeling added.

[1.pre]. A video-emphasis encoding apparatus for applying an emphasis processing to an input video signal to obtain a video bitstream comprising:

[1.1] an emphasis-level setter for setting an emphasis level to the input video signal in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal;

[1.2] an emphasisizer for applying the emphasis processing to the input video signal at the emphasis level to obtain an emphasized video signal;

[1.3] an encoder for encoding the emphasized video signal to obtain a video bitstream; and

[1.4] a multiplexer for multiplexing the video bitstream and data on the emphasis level.

Ex. 1001, 9:4–20.

D. The Alleged Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 1):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–6, 8	103	Fukuda ²
1–4	103	Fukuda, Fujikawa ³
1–6, 8	103	Atsumi ⁴

Petitioner also cites the Declaration of Dr. Scott Acton in support of the Petition. Ex. 1003.

II. ANALYSIS

A. Legal Standards

In an *inter partes* review, the petitioner must show with particularity why each challenged claim is unpatentable. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016); 35 U.S.C. § 312(a)(3); 37 C.F.R. § 42.104(b). As part of the petitioner’s burden, the petition must state how a challenged claim is to be construed and how each element of the construed claim is found in prior art patents or printed publications. 37 C.F.R. §§ 42.104(b)(3)–(4). The burden of persuasion never shifts to the patent owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

B. “Emphasis Processing” and “Emphasis Level”

Each of independent claims 1, 4, 5, and 8 includes limitations reciting the terms “emphasis processing” and “emphasis level.” In the Petition, Petitioner states that no constructions are necessary (Pet. 2), but after filing

² US 5,491,514; issued Feb. 13, 1996. Ex. 1005.

³ US 5,241,387; issued Aug. 31, 1993. Ex. 1006.

⁴ US 6,801,665 B1; published Sept. 30, 1999. Ex. 1007.

the Petition, Petitioner proposed constructions of those terms in the parties' district-court litigation, stating that: (i) the claim term "emphasis processing" means "increasing the amplitude of the high frequency components of a video signal;" and (ii) the claim term "emphasis level" means "a value that represents the amount by which the amplitude of the high frequency components of the video signal is increased." Ex. 2003, 10–11. After Patent Owner relied on those constructions in its Preliminary Response (*see, e.g.*, Prelim. Resp. 8–10),⁵ Petitioner requested (Ex. 3001), and the Board authorized (Paper 8), additional briefing to address how the analysis in the Petition applies under those constructions.⁶ Because we determine Petitioner's showings with respect to those constructions are inadequate to carry Petitioner's burden, our discussion below focuses primarily on those aspects of the parties' briefing.

C. Petitioner's Showings

The Petition includes limitation-by-limitation comparisons of claims 1–6 and 8 to Fukuda (Pet. 10–54), claims 1–4 to Fukuda and Fujikawa (Pet. 61–68), and claims 1–6 and 8 to Atsumi (Pet. 69–98). But Petitioner did not apply the constructions of "emphasis processing" and "emphasis level" in the Petition. In particular, even where Petitioner recites the term "emphasis level" in the Petition, we find nothing in the Petition that clearly identifies in the prior art "a value that represents the amount by

⁵ Patent Owner's Preliminary Response states that it "does not dispute that Petitioner's proposed constructions . . . should be applied in this proceeding." Prelim. Resp. 10.

⁶ Petitioner's counsel contends that the proposed constructions are consistent with the terms' plain and ordinary meanings. *See* Ex. 1024 (transcript of April 4, 2024, conference call between the Board and parties), 7:6–22.

which the amplitude of the high frequency components of the video signal is increased,” as required by the construction of “emphasis level.”⁷ *See* Prelim. Resp. 9 (“the Petition’s analysis of the claim limitations containing these terms against the cited references does not indicate that those references disclose these limitations under Petitioner’s proposed constructions in the District Court Action”). Thus, without Petitioner mapping the constructions to the prior art in a clear and identifiable way, we determine the Petition itself does not satisfy Petitioner’s burden. *See* 37 C.F.R. §§ 42.104(b)(3)–(4).

1. Alleged Obviousness of Claims 1–6 and 8 over Fukuda

Addressing limitation [1.1] (“setting an emphasis level . . .”), Petitioner argues in the Petition that Fukuda discloses a non-linear emphasis circuit with a “limiter 304” (Pet. 14–15), but Petitioner fails to sufficiently explain how this circuit discloses “a *value* that represents the amount by which the amplitude of the high frequency components of the video signal is increased.” Petitioner also points to Fukuda’s activity detector 801 and mode changeover circuit 802, but again fails to sufficiently show how these components of Fukuda disclose a “value.” Pet. 16–18. Additionally, Petitioner relies on: (i) Fukuda’s motion amount detector 901, mode changeover circuit 902, and emphasis circuit 903 (Pet. 19–20); (ii) Fukuda’s DC level detection circuit [1701] and mode control signal generating circuit [1702] (Pet. 20–21); (iii) Fukuda’s mode changeover circuit 701 (Pet. 22–

⁷ Petitioner’s request for additional briefing effectively acknowledges as much, stating “Petitioner requests briefing to explain how the analysis in the petition and the cited prior art satisfies the constructions of ‘emphasis processing’ and ‘emphasis level’ advanced in the Preliminary Response.” Ex. 3001 (Email from J. Monaldo, dated Mar. 22, 2024).

23); and (iv) Fukuda’s coding distortion measuring instrument 1001 and mode changeover circuit 1002 (Pet. 23–24). In none of these examples, however, does Petitioner sufficiently explain how these components of Fukuda disclose or teach a “value that represents the amount by which the amplitude of the high frequency components of the video signal is increased” as required by the construction of “emphasis level” proposed by Petitioner in the district court and agreed to by the parties.

Petitioner’s Preliminary Reply purports to show how “[t]he analysis in the Petition satisfies the constructions of the terms ‘emphasis processing’ and ‘emphasis level,’” but as an initial matter, the Preliminary Reply only addresses Petitioner’s showings relating to Fukuda, not Petitioner’s showings relating to the combination of Fukuda and Fujikawa or Petitioner’s showings relating to Atsumi. *See generally* Prelim. Reply.

Importantly, however, we find nothing in the Preliminary Reply that cures the inadequacies of the Petition. First, the Preliminary Reply generally states that Fukuda uses an “emphasis circuit” to perform the same type of emphasis processing described in the ’128 patent (Prelim. Reply 1–2), but this discussion does not specifically address how Fukuda purportedly satisfies the construction of “emphasis level.”

Next, the Preliminary Reply cites pages 14–16 of the Petition and argues

Fukuda discloses an “emphasis circuit having a nonlinear characteristic” that includes a “limiter” that “limits the amplitude of the output signal” (“***a value that represents the amount by which the amplitude of the high frequency components of the video signal is increased***” – an “emphasis level”) based on whether amplitude of the input signal is greater than a set parameter “L.” In so doing, Fukuda’s emphasis circuit sets “the degree of enhancement . . . smaller than the

degree of suppression” removing “more coding noise . . . at high compression rate, so that the picture quality may be improved.” Fukuda explains that when “higher frequency components of signals are enhanced [(“**increasing the amplitude of the high frequency components of a video signal**” – “emphasis processing”)] . . . the enhanced components are suppressed more in the signal suppression, and hence deterioration occurs in the higher frequency components as compared with the original signal.”

Prelim. Reply 3 (citing Ex. 1005, 4:39–48, 5:51–59, 6:18–20, 6:21–30, 8:3–25). While this argument quotes the constructions of emphasis level and emphasis processing, Petitioner does not adequately explain how Fukuda’s “limiter” that “limits the amplitude of the output signal” constitutes *a value* representing *the amount* by which the amplitude of the high frequency components of the video signal *is increased*. See, e.g., Prelim. Sur-Reply 4 (“Petitioner’s example of Fukuda’s ‘limiter’ that ‘limits the amplitude of the output signal’ based on whether amplitude of the input signal is greater than a set parameter ‘L’ is irrelevant. . . . In other words, Petitioner admits that Fukuda’s limiter sets a maximum amplitude value such that, where the input signal is greater than ‘L,’ the amplitude will be limited. However, the claimed ‘emphasis level’ relates to how much high frequency component amplitudes in a signal **are increased** (*i.e.*, the ‘value that represents the amount by which the amplitude of the high frequency components of the video signal is increased’).”).

Lastly, the Preliminary Reply cites pages 16–22 of the Petition and argues

Fukuda describes different “mode signals” (“**a value that represents the amount by which the amplitude of the high frequency components of the video signal is increased**” – an “emphasis level”) that are used to control the operation of the

deemphasis circuit in various embodiments. Included in Fukuda's various mode signals is a "high compression rate" mode ("mode 1") that sets the "enhancement degree" smaller than the "suppression degree" to remove "the high frequency component of the original signal" ("**increasing the amplitude of the high frequency components of a video signal**" – "emphasis processing") and thereby reduces "coding noise generated in the high frequency components."

Prelim. Reply 3 (citing Ex. 1005, 11:57–59, 14:3–13, 14:52–63, 15:52–16:5, 17:5–15). Again, while this argument quotes the constructions of emphasis level and emphasis processing, Petitioner does not adequately explain how Fukuda's "mode signal" is *a value* representing *the amount* by which the amplitude of the high frequency components of the video signal *is increased*. Even considering the "high compression rate mode" ("mode 1"), which is not cited in the Petition, Petitioner does not adequately explain how setting the enhancement degree smaller than the suppression degree constitutes a value representing an amount of increase. *See, e.g.*, Prelim. Sur-Reply 5 ("A mode is not a value by which an amplitude can be increased. As Petitioner admits, Fukuda's modes only indicate the amount of compression. . . . Fukuda's high compression rate mode only indicates the relationship between Fukuda's 'enhancement degree' to the 'suppression degree.'" . . . Fukuda shows no indication of ***the value*** that the amplitude is increased at the enhancement degree, only a relationship between the enhancement and suppression degrees. And Petitioner does not point to any such indication.").

2. Alleged Obviousness of Claims 1–4 over Fukuda and Fujikawa

Asserting obviousness based on the combination of Fukuda and Fujikawa, Petitioner incorporates the analysis of its arguments for

obviousness based on Fukuda alone, with additional reliance on the combination of Fukuda and Fujikawa explained as follows:

Fujikawa is explicitly offered as part of the combination to demonstrate the broader concept that was obvious to a [person of ordinary skill in the art], namely “***a picture state detected from the input video signal***” of elements [1.1] and [4.1], “***multiplexing the video bitstream and data on the emphasis level***” of elements [1.4] and [4.4], and “***a detector for detecting a degree of enhancement effects already applied to the input video signal, wherein the emphasis-level setter sets the emphasis level in accordance with the detected degree of enhancement effects as the picture state detected from the input video signal***” of claim 3.

Pet. 61–62.

The discussion of Fujikawa in the Petition does not reflect that Fujikawa discloses or teaches a “value that represents the amount by which the amplitude of the high frequency components of the video signal is increased” as required by the construction of “emphasis level” agreed to by the parties. *See* Prelim. Resp. 23. Additionally, Petitioner does not address the combination of Fukuda and Fujikawa in its Preliminary Reply. *See generally* Prelim. Reply.

3. Alleged Obviousness of Claims 1–6 and 8 over Atsumi

Addressing limitation [1.1] in the Petition’s analysis of alleged obviousness over Atsumi, the Petition states the following, among other things:

Atsumi describes the “ROI coefficient scaling step 107” (“***an emphasis-level setter***”) setting an emphasis level to the input video signal in accordance with “quantization indices” (“***encoding conditions for the input video signal***” based on “***a picture state detected from the input video signal***”) and an “identification result of the ROI coefficients” (“***encoding***

conditions for the input video signal” based on “a picture state detected from the input video signal”).

Pet. 74.

The discussion of Atsumi in the Petition does not reflect that Atsumi discloses or teaches a “value that represents the amount by which the amplitude of the high frequency components of the video signal is increased” as required by the construction of “emphasis level” agreed to by the parties. *See* Prelim. Resp. 24. Also, Petitioner’s Preliminary Reply does not address Atsumi. *See generally* Prelim. Reply.

4. Conclusion

Because “emphasis level” is recited in each of the challenged claims either expressly or via dependency, Petitioner’s failure to adequately address how the prior art discloses or teaches the recited “emphasis level” affects each challenged claim and each asserted ground. Therefore, upon consideration of Petitioner’s showing in the Petition and in the Preliminary Reply, we determine Petitioner has not satisfied its burden to show a reasonable likelihood that it would prevail with respect to any challenged claims.

D. Discretionary Denial

Because we determine Petitioner has not carried its burden on the merits, we do not reach the parties’ arguments relating to discretionary denial. *See* Pet. 98–99; Prelim. Resp. 26–32.

III. CONCLUSION

Petitioner has not carried its burden to show a reasonable likelihood that it would prevail in any of its challenges to at least one claim of the ’128 patent. Accordingly, we do not institute *inter partes* review.

IV. ORDER

Accordingly, it is:

ORDERED that the Petition is *denied*, and no trial is instituted.

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