

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.
Petitioner,

v.

ANDREA ELECTRONICS INC.,
Patent Owner.

Patent No. 6,363,345

IPR2017-00626

Petitioner's Remand Brief Regarding Claim 9

I. Introduction

The Board authorized briefing on the arguments Apple presented in the petition with respect to how Martin meets claim 9's requirement that "*said future minimum value is set to a current magnitude value periodically.*" Paper 45. In the Petition, Apple explained that Martin sets its "*future minimum*" (P_{Mmin}) equal to the "*current magnitude*" ($\bar{P}_x(i)$) whenever the current magnitude is less than the future minimum, Pet., 46, and that this operation will occur at the beginning of every sub-window of M samples, Pet., 41, 43-44. Because each such sub-window of M samples constitutes the same duration of time, this operation occurs at a fixed time interval, which satisfies the Federal Circuit's construction of "*periodically.*"

II. Argument

A. Overview Martin

In the Petition, Apple explained how Martin's algorithm worked and how its variables mapped to the claims. Among other things, Apple explained that "Martin teaches a noise floor estimation process that uses a '*current minimum*' ($P_n(i)$) and a '*future minimum*' (P_{Mmin}) to track the minimum signal power ($\bar{P}_x(i)$) during a predetermined period." Pet., 38. Apple also explained that, "[d]uring each period of M samples," the variable P_{Mmin} stores the minimum value of the signal, and "[a]t the end of the period..., *the minimum value is reset* and the process repeats." Pet., 39 (emphasis added). Apple also explained how the value is reset: "[A]t the end of

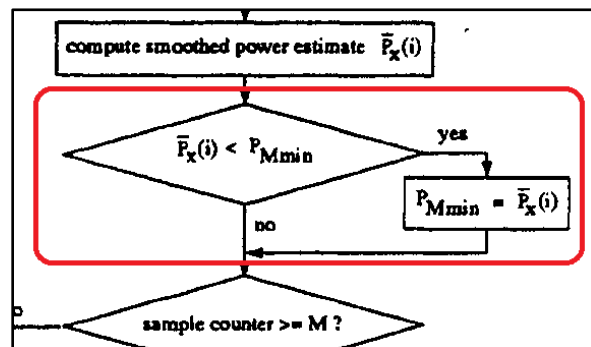
the period..., P_{Mmin} is reset to P_{Max} (value not shown), and *at the beginning of the next period, P_{Mmin} is set to the first magnitude value $\bar{P}_x(i)$.* [Ex. 1003], ¶¶138-40.” Pet., 41 (emphasis added). Thus, at the start of each period of M samples (e.g., 1250 samples), Martin sets P_{Mmin} (“future minimum”) to the first “current magnitude” value $\bar{P}_x(i)$. Ex. 1006, 1094; Ex. 1003, ¶140.

B. Martin Sets Its “Future Minimum” to a “Current Magnitude” at the Start of Every Period of M Samples

In the Petition, Apple identified the step in Martin’s algorithm that met claim 9 as follows: “As explained with respect to claim 5 (§ V.C.3.a)(2)), the ‘future minimum’ P_{Mmin} is set to the value of the ‘current magnitude’ $\bar{P}_x(i)$ whenever $\bar{P}_x(i) < P_{Mmin}$.” Pet., 46. Apple thus explicitly relied on its explanation why Martin met claim 5, in which Apple identified the portion of Martin’s algorithm that

compares these values and sets P_{Mmin} to $\bar{P}_x(i)$ (circled in red in embedded figure).

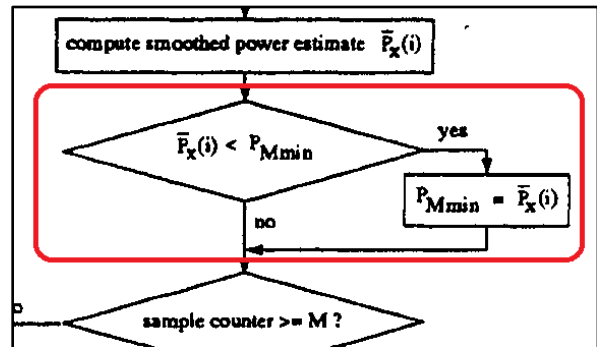
Pet., 43-44. As Apple explained, that operation allows the Martin algorithm to



track the minimum value of the signal during a sub-window of “a predetermined number of samples M (‘a predetermined period of time’)” and to set the “future minimum” P_{Mmin} to the value of the “current magnitude” $\bar{P}_x(i)$ at the same time interval (i.e., the beginning of every period of M samples). Pet., 41, 43.

As Apple explained for claim 5, “Whenever M samples have been read...

we store the minimum power of the last M samples and *reset* P_{Mmin} .” Pet., 43 (emphasis added) (quoting Ex. 1006, 1094). P_{Mmin} is reset by setting it equal to P_{Max} , which is the maximum possible value P_{Mmin} can have, and then “at the beginning of the next period, P_{Mmin} is set to the first magnitude value $\bar{P}_x(i)$.” Pet., 41; Ex. 1003, ¶¶138-140. As Dr. Hochwald explained, “[b]y setting $P_{Mmin} = P_{max}$ it follows immediately that during *the next cycle of the loop in red* in Figure 2 that $P_{Mmin} = \bar{P}_x(i)$.” Ex. 1003, ¶140 (emphasis added). This step is circled in red and is the same step Apple relied on as meeting



claim 9. The '345 patent uses the same operation—initiating the future minimum with the current magnitude every five seconds. Ex. 1001, Fig. 3 (304), Fig. 7 (722), 6:24-28 (“A future minimum value is initiated every 5 seconds at 304 with the value of the current magnitude ($Y(n)$) and replaced with a smaller minimal value over the next 5 seconds”), 8:36-40. Martin’s operation occurs at the start of every sub-window of M samples, and thus occurs “*periodically*,” which was construed to mean “at regular intervals of time.”

III. Conclusion

Apple respectfully submits that Martin teaches what claim 9 specifies, and that the Board should cancel that claim.

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Respectfully Submitted,

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