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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EYRAN LIDA, AVIV SALAMON, GABY GUR COHEN,
and
ISRAEL GREISS

Appeal 2018-001236
Application 15/170,019
Technology Center 2600

Before CARLA M. KRIVAK, HUNG H. BUI, and JON M. JURGOVAN, *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants[1] appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1–8, which are all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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[1] Appellants identify the real party in interest as Valens Semiconductor Ltd.

STATEMENT OF THE CASE

Appellants' invention is directed to a system and method "for recovering rapidly from a mode-conversion of a common mode interference" using a transceiver "configured to utilize . . . slicing errors to adapt the [transceiver's] FA-MCC [(fast-adaptive mode-conversion canceller)] to a level that reduces the packet loss rate to below 1%" within less than 1 millisecond from an occurrence of a differential interference causing packet loss rate above 10% (Abstract).

Claims 1 and 6 are independent. Independent claim 1, reproduced below, is exemplary of the subject matter on appeal.

> 1. A transceiver configured to recover rapidly from a mode-conversion of a common mode interference, comprising:
>
> a slicer configured to generate slicing decisions and slicing errors based on a differential signal, transmitted at a rate above 500 Mbps, which is received from a second transceiver;
>
> a common mode sensor analog front end (CMS-AFE) configured to sense a common mode component of the differential signal;
>
> the CMS-AFE is coupled to a fast-adaptive mode-conversion canceller (FA-MCC) configured to generate a compensation signal that compensates for differential interferences that are correlated with the common mode component; and
>
> within less than 1 millisecond from an occurrence of a differential interference that causes packet loss rate above 10% as a result of the mode-conversion, the transceiver is configured to utilize the slicing errors to adapt the FA-MCC to a level that reduces the packet loss rate to below 1%.

REJECTIONS and REFERENCES

The Examiner rejected claims 1, 2, and 6 under 35 U.S.C. § 103 based upon the teachings of Kota (US 2012/0002711 A1; published Jan. 5, 2012),

Chu (US 2013/0155953 A1; published June 20, 2013), Ogata (US 2012/0173668 A1; published July 5, 2012), Lo (US 6,097,767; issued Aug. 1, 2000), and Kruger (US 2011/0282642 A1; published Nov. 17, 2011).

The Examiner rejected claims 3 and 7 under 35 U.S.C. § 103 based upon the teachings of Kota, Chu, Ogata, Lo, Kruger, and Seto (US 5,623,515; issued Apr. 22, 1997).

The Examiner rejected claim 4 under 35 U.S.C. § 103 based upon the teachings of Kota, Chu, Ogata, Lo, Kruger, and Currivan (US 2007/0061642 A1; published Mar. 15, 2007).

The Examiner rejected claims 5 and 8 under 35 U.S.C. § 103 based upon the teachings of Kota, Chu, Ogata, Lo, Kruger, and Cavelos (US 4,204,211; issued May 20, 1980).

ANALYSIS

With respect to claim 1, the Examiner finds the combination of Kota, Ogata, Lo, and Kruger teaches a "transceiver configured to recover rapidly from a mode-conversion of a common mode interference," in which

> within less than 1 millisecond from an occurrence of a differential interference that causes packet loss rate above 10% as a result of the mode-conversion, the transceiver is configured to utilize the slicing errors to adapt the FA-MCC to a level that reduces the packet loss rate to below 1%,

as claimed (Final Act. 4–7; Ans. 4–7). Specifically, the Examiner finds Figure 2A of Kota's communication device teaches a transceiver configured to utilize slicing errors to adapt an FA-MCC to a level that reduces electromagnetic interference (Final Act. 4–5 (citing Kota ¶¶ 15, 32, 37, 72, Fig. 2A)). The Examiner also finds "Ogata teaches that reducing differential

interference reduces packet loss," and "Kruger teaches that packet loss of 10% is high, and a packet loss of 1% is considered normal" (Ans. 5 (citing Ogata ¶ 3; Kruger ¶ 16)). The Examiner further finds "Lo teaches that a filter setting can be controlled within one millisecond" (Ans. 4–5 (citing Lo col. 7, ll. 29–40)). The Examiner concludes "it would be obvious to one ordinary skill[ed] in the art to include Lo's fil[t]er controlling in Kota's invention," to recover within less than 1 millisecond from an occurrence of a differential interference as recited in claim 1 (Ans. 5–6). The Examiner further concludes "the combined teaching of Kota, Ogata and Kruger reads on the Applicant's claimed limitation of reducing packet loss from 10% to 1%" (Ans. 5). We do not agree.

We agree with Appellants that Lo, Kota, Ogata, and Kruger, alone or in combination, fail to teach or suggest "within less than 1 millisecond from an occurrence of a differential interference that causes packet loss rate above 10% as a result of the mode-conversion," a "transceiver is configured to utilize the slicing errors to adapt the FA-MCC to a level that reduces the packet loss rate to below 1%," as recited in claim 1 (App. Br. 7–9, 11–12). As Appellants explain, "none of the references discloses reducing the packet loss rate to below 1% within less than 1ms" (App. Br. 11). Rather, "Lo's one millisecond refers to the '*procedure for determining the optimum equalizer setting*' that must come after '*exiting the blind wait state 74*' that takes at least 160ms" (App. Br. 9–11 (citing Lo col. 6, ll. 5–20, col. 7, ll. 29–40, Fig. 5)). Further, Lo is not concerned with reducing packet loss rate for rapid recovery from a mode-conversion of a common mode interference as claimed. Rather, Lo is concerned with "prevent[ing] the equalizer controller 36 from calibrating on a noisy signal when a cable is first plugged in[]," and

determining an optimum equalizer setting for the cable's length (*see* Lo col. 5, ll. 53–64, col. 6, ll. 18–20).

Kota, Ogata, and Kruger do not make up for the above-noted deficiencies of Lo. Kota's adaptive filters 216 (the Examiner's asserted FA-MCC) do not reduce packet loss rate to below 1% within less than 1ms from an occurrence of a differential interference, as claimed. That is, Kota's adaptive filters reduce interference after "*the tone generator 218 has* [had] *a chance to converge and start generating estimate signals . . . that reduce the interference components*" (App. Br. 7–8 (citing Kota ¶ 58)). Ogata's reference to packet loss from electromagnetic interference, and Kruger's disclosure of packet losses of 10% and below 1% do not teach or suggest reducing packet loss rate within less than 1 millisecond from above 10% to below 1%, as recited in claim 1 (App. Br. 8, 12).

The Examiner also has not shown the additional teachings of Chu, Seto, Currivan, and Cavelos make up for the above-noted deficiencies of Kota, Kruger, Lo, and Ogata. Thus, for the reasons set forth above, we do not sustain the Examiner's rejection of independent claim 1 independent claim 6, argued for substantially the same reasons as claim 1, and claims 2–5, 7, and 8 dependent therefrom (App. Br. 9).

DECISION

The Examiner's decision rejecting claims 1–8 is reversed.

REVERSED