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Minotani et al.(10) **Pub. No.: US 2022/0416799 A1**(43) **Pub. Date: Dec. 29, 2022**(54) **AD CONVERTER**(52) **U.S. Cl.**CPC **H03M 1/08** (2013.01)(71) Applicant: **Nippon Telegraph and Telephone Corporation**, Tokyo (JP)

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ABSTRACT(72) Inventors: **Tadashi Minotani**, Musashino-shi, Tokyo (JP); **Kenichi Matsunaga**, Musashino-shi, Tokyo (JP)

An AD converter includes: an accumulation conversion unit that performs a comparison of magnitudes of an input voltage V2 and an accumulated voltage V1 obtained by accumulating a unit voltage and outputs a comparison signal representing a result of the comparison; an accumulation comparison determination unit that repeatedly compares an accumulated voltage V1, obtained by repeating the comparison until the comparison signal changes and corresponding to an accumulated voltage V1 at which the comparison signal changes, and the input voltage V2 a predetermined number of times to determine an equivalent-state accumulation number in which a state probability that the comparison signal changes is equal to a threshold; and a control unit that determines conversion data of the input voltage using the equivalent-state accumulation number.

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