

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0235485 A1 KOGURE et al.

Jul. 11, 2024 (43) **Pub. Date:**

(54) TRACKER MODULE AND COMMUNICATION DEVICE

(71) Applicant: Murata Manufacturing Co., Ltd.,

Nagaokakyo-shi (JP)

(72) Inventors: Takeshi KOGURE, Nagaokakyo-shi

(JP); Tomohide ARAMATA,

Nagaokakyo-shi (JP); Yuuki FUKUDA,

Nagaokakyo-shi (JP); Toshiki MATSUI, Nagaokakyo-shi (JP)

(21) Appl. No.: 18/616,654

Mar. 26, 2024 (22) Filed:

Related U.S. Application Data

Continuation of application No. PCT/JP2022/ 035971, filed on Sep. 27, 2022.

(30)Foreign Application Priority Data

Sep. 29, 2021 (JP) 2021-159654

Publication Classification

(51) Int. Cl. H03F 1/02 (2006.01)

H03F 3/24 (2006.01)U.S. Cl.

CPC H03F 1/0233 (2013.01); H03F 3/245 (2013.01); H03F 2200/105 (2013.01); H03F 2200/451 (2013.01)

(57)**ABSTRACT**

A tracker module includes a module laminate, a first integrated circuit and a second integrated circuit on the module laminate, and a capacitor disposed on the module laminate and included in a switched-capacitor circuit. The switchedcapacitor circuit is configured to generate discrete voltages based on an input voltage. The first integrated circuit includes a switch included in the switched-capacitor circuit. The second integrated circuit includes a switch included in at least one of a supply modulator and a pre-regulator circuit. The supply modulator is configured to selectively output at least one of the discrete voltages based on an envelope signal. The pre-regulator circuit is configured to convert the input voltage into a first voltage and output the first voltage to the switched-capacitor circuit. A distance between the first integrated circuit and the capacitor is shorter than a distance between the second integrated circuit and the capacitor.

