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(19) **United States**(12) **Patent Application Publication****Tai et al.**(10) **Pub. No.: US 2022/0385245 A1**(43) **Pub. Date:****Dec. 1, 2022**(54) **RADIO FREQUENCY AMPLIFIER AND BIAS CIRCUIT**(71) Applicant: **RichWave Technology Corp.**, Taipei (TW)(72) Inventors: **Shun-Nan Tai**, Taipei (TW); **Yao Hui Chiang**, Taipei (TW)(73) Assignee: **RichWave Technology Corp.**, Taipei (TW)(21) Appl. No.: **17/474,055**(22) Filed: **Sep. 14, 2021**(30) **Foreign Application Priority Data**

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(57)

ABSTRACT

A radio frequency (RF) amplifier and a bias circuit are provided. The RF amplifier includes an amplifier, a first inductive-capacitive resonance circuit, and a first bias circuit. The amplifier includes an input terminal configured to receive an incoming RF signal through a first RF path. The first inductive-capacitive resonance circuit includes a first terminal coupled to a first reference voltage. A second terminal of the first inductive-capacitive resonance circuit is coupled to the first RF path. In response to the first reference voltage being at a first reference level, the RF amplifier is enabled; in response to the first reference voltage being at a second reference level, the RF amplifier is disabled. The first bias circuit includes a first terminal configured to be coupled to the first reference voltage and a second terminal coupled to the input terminal of the amplifier to provide a first direct current (DC) component.

