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(54) **METHODS AND CIRCUITRY FOR CONTROLLING GAIN OF RADIO-FREQUENCY DATA CONVERTERS**

(71) Applicant: **Apple Inc.**, Cupertino, CA (US)

(72) Inventor: **Mina Mofreh Gad Elsayed Abdallah**, Munich (DE)

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(57) **ABSTRACT**

An electronic device with wireless circuitry is provided. The wireless circuitry can include a radio-frequency data converter block configured to receive baseband signals and to output corresponding radio-frequency signals to a radio-frequency power amplifier. The radio-frequency data converter block may include one or more radio-frequency digital-to-analog converter (DAC) cells configured to receive an oscillator signal. The radio-frequency data converter block can exhibit a gain that is controlled using gain control circuitry. The gain control circuitry can control the gain of the radio-frequency data converter block by selectively enabling switchable components within each DAC cell to realize an incremental gain step of a first resolution and by adjusting the duty cycle of the oscillator signal to realize an incremental gain step of a second resolution finer than the first resolution.