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(54) **DIGITAL COMPENSATION SYSTEM FOR A RADIO FREQUENCY POWER AMPLIFIER MODULE**

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(57) **ABSTRACT**

A digital compensation system for a radio frequency (RF) power amplifier module is disclosed. The digital compensation system includes an RF power amplifier having a first input, a first output, and a first bias input, wherein the RF power amplifier is configured to receive an RF signal at the first input and generate an amplified version of the RF signal at the first output. The digital compensation system also includes compensation circuitry coupled between the first input and the first output and a bias output coupled to the RF power amplifier, wherein the compensation circuitry is configured, in response to the RF signal, to generate or adjust a bias signal at the first bias input to correct dynamic bias errors caused by amplification variations that have time constants.