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Khlat et al.(10) **Pub. No.: US 2022/0407463 A1**(43) **Pub. Date: Dec. 22, 2022**(54) **WIDEBAND TRANSMISSION CIRCUIT**(71) Applicant: **Qorvo US, Inc.**, Greenboro, NC (US)(72) Inventors: **Nadim Khlat**, Cugnaux (FR); **James M. Retz**, Cedar Rapids, IA (US)(21) Appl. No.: **17/700,685**(22) Filed: **Mar. 22, 2022****Related U.S. Application Data**

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(57)

ABSTRACT

A wideband transmission circuit is provided. The wideband transmission circuit includes a transceiver circuit and a power amplifier circuit(s). The transceiver circuit generates a radio frequency (RF) signal(s) from a time-variant input vector and provides the RF signal(s) to the power amplifier circuit(s). The power amplifier circuit(s) amplifies the RF signal(s) based on a modulated voltage and provides the amplified RF signal(s) to a coupled RF front-end circuit (e.g., filter/multiplexer circuit). In embodiments disclosed herein, the transceiver circuit is configured to apply an equalization filter to the time-variant input vector to thereby compensate for a voltage distortion filter caused by a coupling of the power amplifier circuit(s) and the RF front-end circuit. As a result, it is possible to reduce undesired instantaneous excessive compression and/or spectrum regrowth resulting from the voltage distortion filter to thereby improve efficiency and linearity of the power amplifier circuit(s).

