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(19) **United States**(12) **Patent Application Publication****Ahirwar et al.**(10) **Pub. No.: US 2024/0214081 A1**(43) **Pub. Date: Jun. 27, 2024**(54) **POLAR TRANSMITTER CALIBRATION**(71) Applicant: **NXP USA, Inc.**, Austin, TX (US)(72) Inventors: **Vijay Ahirwar**, Pune (IN); **Oliver Jérôme Célestin Jamin**, Sainte Honorine du Fay (FR); **Nilesh Nilkanth Khude**, Pune (IN)(21) Appl. No.: **18/174,437**(22) Filed: **Feb. 24, 2023**(30) **Foreign Application Priority Data**

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(57)

ABSTRACT

Polar transmitter calibration Various embodiments relate to a transmit and receive system using polar modulation, including: a transmitter configured to produce a transmit signal using modulation; a receiver configured to receive a transmit signal using in-phase/quadrature (IQ) processing; a Tx/Rx switch configured to loop a transmitted signal from the transmitter back to the receiver for calibration; and a controller configured to: command the transmitter to generate a real signal; command the Tx/Rx switch to loop the real signal back to the receiver to produce a first received signal; command the transmitter to generate an imaginary signal; command the Tx/Rx switch to loop the imaginary signal back to the receiver to produce a second received signal; determine a compensation parameter based on the first received signal and the second received signal; and command the receiver to compensate a third received signal based upon the compensation parameter.

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