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(54) **SUPPLY VOLTAGE CIRCUIT FOR REDUCING IN-RUSH BATTERY CURRENT IN AN ENVELOPE TRACKING INTEGRATED CIRCUIT**

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(57) **ABSTRACT**

A supply voltage circuit for reducing in-rush battery current in an envelope tracking (ET) integrated circuit (ETIC) is provided. The ETIC includes an ET voltage circuit configured to generate a time-variant ET voltage, which includes an offset voltage, in multiple time intervals based on a supply voltage. In some cases, the offset voltage and the supply voltage may both need to be increased or decreased as the time-variant ET voltage increases or decreases. As the offset voltage and the supply voltage increase or decrease, an excessive in-rush battery current may result in a reduced battery life. In this regard, a supply voltage circuit is configured to help the ETIC to adapt the supply voltage on a per-symbol basis. As a result, it is possible to reduce the in-rush battery current in the ETIC while still allowing the time-variant ET voltage to change in a timely manner.