

POWER AMPLIFIERS WITH SUPPLY CAPACITOR SWITCHING

ABSTRACT OF THE DISCLOSURE

Power amplifiers with supply capacitor switching are provided herein. In certain embodiments, a power amplifier system includes a power amplifier that provides amplification to a radio frequency (RF) signal, a power management circuit that controls a voltage level of a supply voltage of the power amplifier, a supply capacitor having a first end connected to the supply voltage, and a bulk n-type field-effect transistor (NFET) switch. The power management circuit is operable in multiple supply control modes (for example, an average power tracking mode and an envelope tracking mode). Additionally, the bulk NFET switch is controlled based on the supply control mode of the power management circuit. The bulk NFET switch includes a ground NFET in series with a second end of the supply capacitor and a ground voltage, and a discharge NFET connected between the second end of the supply capacitor and the supply voltage.

[No Suitable Figure]