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(71) Applicant: TRIQUINT SEMICONDUCTOR, INC. [US/US]; 2300 N.E. Brookwood Parkway, Hillsboro, OR 97124 (US).

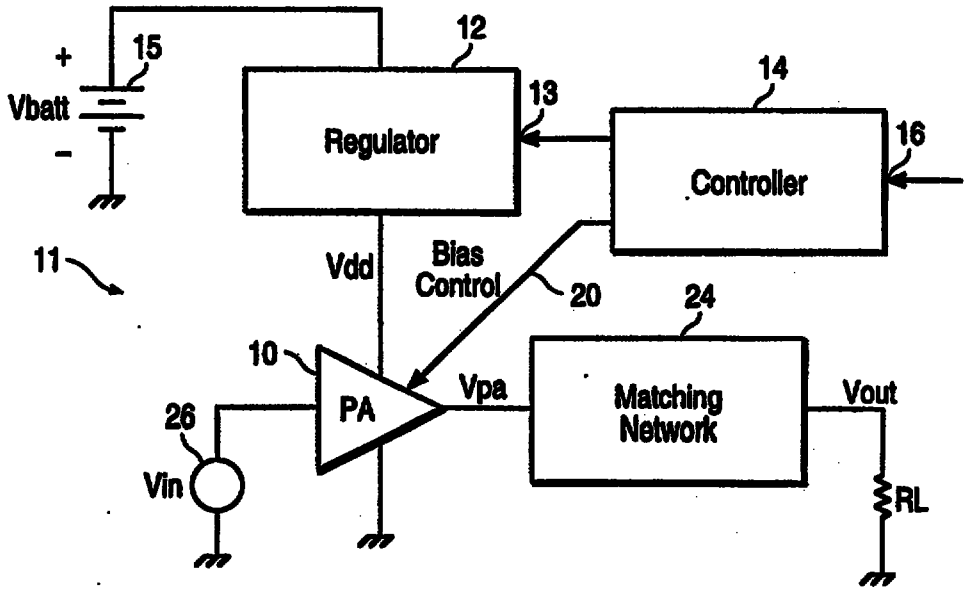
(72) Inventors: SHARP, Steven; 221 N.W. Miller, Portland, OR 97229 (US). TAYLOR, Stewart, S.; 16927 N.W. Hazelgrove Court, Beaverton, OR 97006 (US). HAMMOND, Samuel, W.; 14150 S.W. Allen Boulevard #60, Beaverton, OR 97005 (US). RUEBUSCH, Ronald, R.; 5635 S.W. Knightsbridge Drive, Portland, OR 97219 (US).

(74) Agent: OGONOWSKY, Brian; Skjerven, Morrill, MacPherson, Franklin & Friel LLP, Suite 700, 25 Metro Drive, San Jose, CA 95110 (US).

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(57) Abstract

An operating voltage applied to a transmitter's power amplifier in a mobile wireless transceiver is dynamically controlled so as to improve the efficiency of the transmitter at all output power levels. In one embodiment, the bias current levels within the transmitter are also varied to optimize the efficiency of the transmitter at all output power levels. In a preferred embodiment, a highly efficient switching regulator is controlled by a control circuit to adjust the operating voltage and/or bias current for the power amplifier in the transmitter. The control circuit has as its input any of a variety of signals which reflect the actual output power of the transmitter, the desired output power, or the output voltage swing of the transmitter.