



US006572546B1

(12) **United States Patent**
Bax et al.

(10) **Patent No.:** **US 6,572,546 B1**
(45) **Date of Patent:** **Jun. 3, 2003**

(54) **TWO LEVEL POWER SUPPLY AND METHOD FOR ULTRASOUND TRANSMISSION**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/898,199**

(22) Filed: **Jul. 3, 2001**

(51) **Int. Cl.**⁷ **A61B 8/00**

(52) **U.S. Cl.** **600/437; 323/234**

(58) **Field of Search** **600/437-472**

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(57) **ABSTRACT**

A two level power supply and method are provided for ultrasound transmission. A coupling capacitor is provided between a high voltage source and a low voltage source. The coupling capacitor provides direct current restoration for a two level power supply selector connected with an ultrasound transmit array. For example, a clamping circuit, including a capacitor and a diode, is provided between the high voltage and the low voltage sources. The high voltage source connects as a power supply to a pulser. Control signals are provided to the pulser to switch the output between the high voltage and ground depending on the type of ultrasound signal being transmitted. A voltage rail of the transmit array connects with the clamp circuit and receives a low voltage for CW Doppler mode imaging and a high voltage for B-mode imaging. This low cost circuitry may simplify and improve the delivery of high voltage in a two or more level power supply selection in ultrasound imaging.

23 Claims, 6 Drawing Sheets

