



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

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(54) **MAGNETIC RESONANCE IMAGING INTERFERENCE IMMUNE DEVICE**

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(57) **ABSTRACT**

**Related U.S. Application Data**

A voltage compensation unit reduces the effects of induced voltages upon a device having a single wire line. The single wire line has balanced characteristic impedance. The voltage compensation unit includes a tunable compensation circuit connected to the wire line. The tunable compensation circuit applies supplemental impedance to the wire line. The supplemental impedance causes the characteristic impedance of the wire line to become unbalanced, thereby reducing the effects of induced voltages caused by changing magnetic fields.

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(51) **Int. Cl.**<sup>7</sup> ..... **G01V 3/00**

(52) **U.S. Cl.** ..... **324/318; 324/322**

(58) **Field of Search** ..... 324/318, 322, 324/309, 307, 300, 319

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**49 Claims, 11 Drawing Sheets**

