



Wireless Power Handbook

A Supplement to GaN Transistors for Efficient Power Conversion

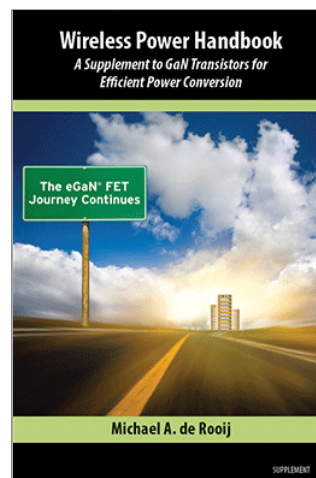
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Since Nikola Tesla first experimented with wireless power, there has been a quest to “cut the cord” of electrical power – and go wireless! Now, over 100 years later, we finally have the technological capability to achieve Tesla’s vision.

Highly-resonant wireless power transfer, based on the generation of magnetic fields, has proven to be a viable path. Magnetic fields offer the necessary requisites – ease of use, robustness and, most importantly are considered safe.

A major challenge for implementing wireless power is the design of the amplifier. From experimental results presented in this book, it is clear that the ZVS Class D topology, fitted with eGaN power transistors provides the best solution. With their low capacitance, zero reverse recovery, and low on-resistance, eGaN FETs ensure low operating losses leading to higher amplifier efficiency and help keep EMI generation low. These devices have a very small footprint and low profile, which is important for mobile and medical applications.

Understanding the many challenges to designing an amplifier for wireless power, such as radiated EMI, multi-mode systems and ways to improve efficiency is the aim of this handbook.



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