Self-Oscillating Resonant Gate Drive for Resonant Inverters and Rectifiers Composed Solely of Passive Components - DTU Orbit (21/08/2019)

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This paper presents a new self-oscillating resonant gate drive composed solely of passive components. The gate drive can be used in various resonant converters and inverters and can be used for both low and high side gate drive. The paper presents examples of how higher order harmonics can be used to improve the performance of the gate drive and how the gate drive can be implemented in a class E inverter, a class DE inverter and in class E inverter with a synchronous class E rectifier. The paper shows practical implementations of all the proposed inverters and converters operating in the Very High Frequency (VHF) range, all showing good results with peak efficiency up to 82% and output regulation from 70% to full load without bursting.

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