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| **Title:** | An Effective DC-DC Charging System Using Voltage Doubler Based Resonant LCC and LLC Converters | | | |
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| **Abstract:** |  |
| LCC (Inductor-Capacitor-Capacitor) and LLC (Inductor-Inductor-Capacitor) resonant converters are the two most promising resonant converter topologies. Because of their smaller size and reduced power losses, resonant converters are preferred for power conversion. This paper proposes an efficient DC-DC charging system that makes use of an overview of the functioning and design principles of full-bridge LCC and LLC resonant converters. The system produces a steady 48 V output voltage at 200 W of power and can operate within an input voltage range of 25 to 40 V. Though the design of a resonant converter is a complex process, the purpose of this paper is to streamline, schematic, and facilitate the appropriate design of the resonant tank in an effective way. The simulation results show the proposed DC-DC charging system using the resonant converters performs efficiently. Numerous benefits, such as a broad input voltage range, steady output voltage, and reliable operation, make the suggested system appropriate for a variety of electrical and electronic uses. | |