

Electric Vehicle Battery Charger with IOT System

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Abstract: *The accelerating adoption of electric vehicles (EVs) has elicited the requirement for modern and developed charging solutions that promise efficiency, as well reliability. In this paper, we propose an Internet of Things (IoT) enabled DC electric vehicle charger to meet these requirements. The solution offers IoT functionalities for full and remote monitoring, diagnostics roadside assistance as well as charging management adapting to the available power. Making use of top-level sensors and connectivity, the charger system optimizes energy usage by intelligent grid balancing as well as enables dynamic load balancing techniques for installation-wise benefits such that it is possible to implement predictive maintenance. Meanwhile, IoT integration ensures a seamless user experience through mobile apps so that users can check the charging status of their vehicle and set up sessions at different times of the day while receiving important notifications. DC EV chargers are faster at charging than normal Alternating Current (AC) ones. They transform electricity from the grid into a form that can be directly applied in the vehicle battery. This ability translates to highly reduce charging times, which explains why they are well-suited for along highways and in commercial applications or urban settings where fast turnaround is critical. These trends are identified by service providers to improve charger placement and availability for drivers.*

Keywords: Battery, IOT, Charging, Charger, Electric vehicle, EV