NEUTRAL POINT TYPE BOOST CONVERTER CIRCUIT APPLICATION FOR SHORT RANGE WIRELESS ENERGY TRANSFER

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ABSTRACT

In this project, the Neutral Point Type Boost Converter Circuit used for application short range Wireless Energy Transfer. This converter converts current from AC to DC output. Neutral Point Type Boost Converter Circuit chosen because this type can reduce high smoothing voltage with less circuit complexity [1] and reducing cost. This circuit is the most effective method to reduce Total Harmonic Distortion (THD). THD will provide the circuit with greater efficiency and also can cause serious consequences to power distribution systems in the form of harmonic distortion [2]. Energy is to be transferred wireless within short range to determine the circuit efficiency and capability. Energy will transfer within wireless based on magnetic resonance. Magnetic resonance coupling is a new concept in wireless energy transmission [3]. The resonant nature of the process ensures a strong interaction between the sending and receiving unit [4]. For this project, the series resonant used application for wireless energy transfer. Energy can transfer within wireless with two methods such as near-field method and far-field method. For short range wireless energy transfer, near-field method will be use. For develop and simulate the circuit, PSim software will be used to obtain the results. After that, hardware will be setup to get actual result and make the comparison between simulation result and experiment result.

TABLE OF CONTENTS