

TWO STAGE VI – BOOST REGULATED SOLAR PV INVERTER FOR STAND ALONE APPLICATION

Project Report Submitted By

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ABSTRACT

The goal of this project is to develop a prototype V-I - Boost regulated Inverter unit for a standalone PV application. Design goals will be to achieve the modularity, high reliability and less cost. The conversion of solar power into usable power requires power electronics interface. An effort towards exploring the local solar radiations conditions so as to utilize this energy for best possible way with a proper power electronics interface in a standalone PV application is done in this project. As the need for remote operation of electronic devices continues to increase, power for these devices becomes more of a concern. Remote applications are powered mostly by batteries that are either recharged or changed on a regular basis. The proposed scheme is designed for standalone application. The performance of proper inverter controllers are simulated and validated in Matlab/Simulink GUI environment. All simulation models of VI characteristics, PWM, High frequency signal, interface filters, and the inverter controllers are modeled using Matlab/Simulink/Sim-Power model block library.