

## Design and Implementation of Grid-Connected Photovoltaic Inverter

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**Abstract :** Nowadays, a grid-connected photovoltaic (PV) inverter is adopted in various places like as home, factory, because grid-connected PV inverter can reduce total power consumption by supplying electricity from PV array. In this paper, design and implementation of a 300 W grid-connected PV inverter are described. It is implemented with TI Piccolo DSP core and operated at 100 kHz switching frequency in order to reduce harmonic contents. The maximum operating input voltage is up to 45 V. The characteristics of the designed system that include maximum power point tracking (MPPT), single operation and battery charging are verified by simulation and experimental results.

**Keywords :** design, grid-connected, implementation, photovoltaic

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