

## SMALL PURE SINE GRID/STANDALONE INVERTER USING PLL SYNC TECHNIQUE WITH DSPIC MICROCONTROLLER

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This research presents an approach to develop small single phase inverter and power lower than 200w for rural area in highland in Thailand. The inverter can work with or without grid conneted can switch select operated mode. With operate condition because many PV solar home installed in 2002 most PV supplied about 120wp in rural area in highland. This inverter system can operate with other inverter in function grid connected when other inverter operate in standalone function. The PLL technique using integrated and derivative function [1] this purpose system using dsPIC clark, park (d-q plane) sub module program and Carrier-Based PWM technique to drive single phase full bridge inverter topology. The low pass filter part design cut-off 300Hz and switching frequency 5kHz. The effectiveness of the proposal is validated by laboratory experiments on a prototypical realization of the proposed PLL structure.

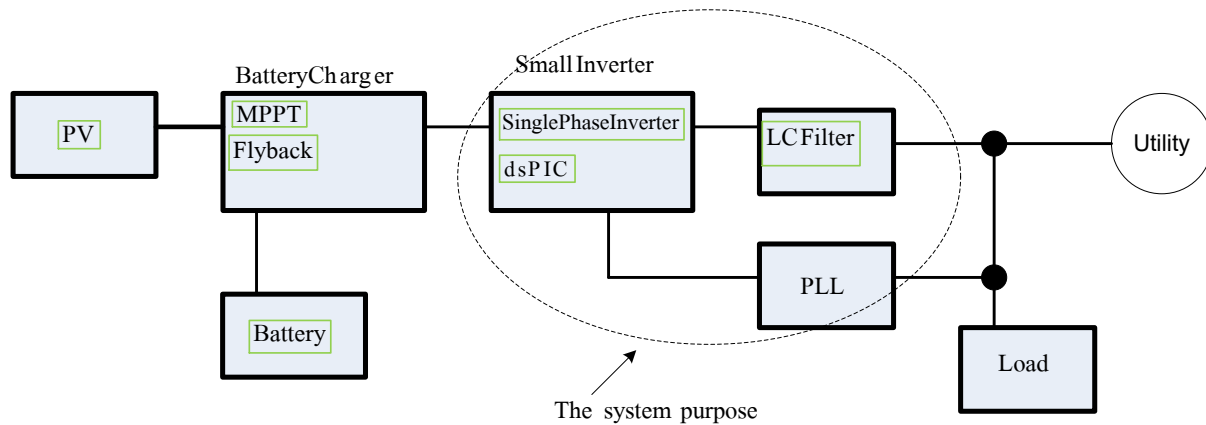


Figure 1: PV system and small single phase inverter with PLL block module.