Solar Panel Inverter DEMO
Fact Sheet

Solar Panel Inverter

Description

In the future, the demand for the green energy will be much more stronger. One of the possible way is use the direct conversion from the solar energy to the electrical energy. This is maintained by the photovoltaic solar panels, which produces the various DC output voltage with the output power up to about 250Wp. The dedicated inverters are used for the conversion from the DC power to the AC power. The inverter maintains the right working point of the solar panel for maximum solar energy utilization. The inverters can be controlled by Freescale Semiconductor's digital signal controllers (DSCs). The one or several DSCs can control the whole inverter in various configuration and output power. Freescale Semiconductor offers a broad portfolio of digital signal controllers for power management and motor control applications. Target markets include consumer, industrial and other markets.

This demo is an example how the solar panel inverter can be built.

Applications

- Small island electricity systems
- Small boat electricity systems
- Independent electricity source
- Solar power with battery back-up
- Appliance and control panels
- Industrial control
- Access and security power source
- Telecomunication power source

Demo Features

- Inverter converts the electricity generated by solar photovoltaic panel to standard AC power line230V or 110V, 50Hz or 60Hz. It depends on the area, where the inverter will be used.
- The inverter has the inputs for one or two solar panels connected in series. The various range of the solar PV panels with the output power up to 250Wp each can be utilized.

- The inverter provides the maximum power point tracking (MPPT) feature to maximize utilization of the generated DC power by the solar panel.
- It works in the island (OFF_GRID) configuration.
- The overvoltage, undervoltage, overcurrent and overtemperature protections are implemented.
- The inverter provides the main actual status information by the isolated RS-485 line to the supervisor level.
- The several inverters can be conected in parallel at the output to maintain the higher output power in island systems.

Product Features and Specifications

- Reference design manual
- Solar panel inverter DEMO
- Easy to use documentation
- External connection diagram
- Inverter fact sheet
- Application support available from experts at Freescale Semiconductor

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