



STEVAL-ISS001V1

Line interactive 450 W UPS reference design - 120 V / 60 Hz model

Data Brief

Features

- Output rating power: 700 VA / 450 W
- Input voltage: 83 Vac \pm 3% - 153 Vac \pm 3%
- Input frequency: 60 Hz
- Output voltage: 96 - 138 Vac \pm 3 Vac
- Output frequency: 60 Hz \pm 0.1 Hz
- On battery output waveform: quasi-sine (square wave)
- Transfer time: Class 3 [EN62040-3]
- Typical recharge time: 8h
- Backup time (full load): 2.5 - 3 min.
- Battery quantity: 2 pieces
- Battery nominal voltage: 12 V
- Battery capacity: 7.2 Ah
- Battery recharge: two steps
- Operating temperature: 0 °C to + 40 °C
- Storage temperature: - 20 °C to + 60 °C
- Size (H x W x D): 175 mm x 120 mm x 430 mm
- Weight: 11 kg
- Shipping weight: 11.5 kg
- EMI classification: EN 62040-2



The UPS was designed with RS-232 joint signal and USB interfaces (USB for RS-232 converter). It is possible to connect the UPS to a PC using an RS-232 or USB cable and control the UPS status through the "UPS Monitor 3.0x" software that must be installed on the same PC.

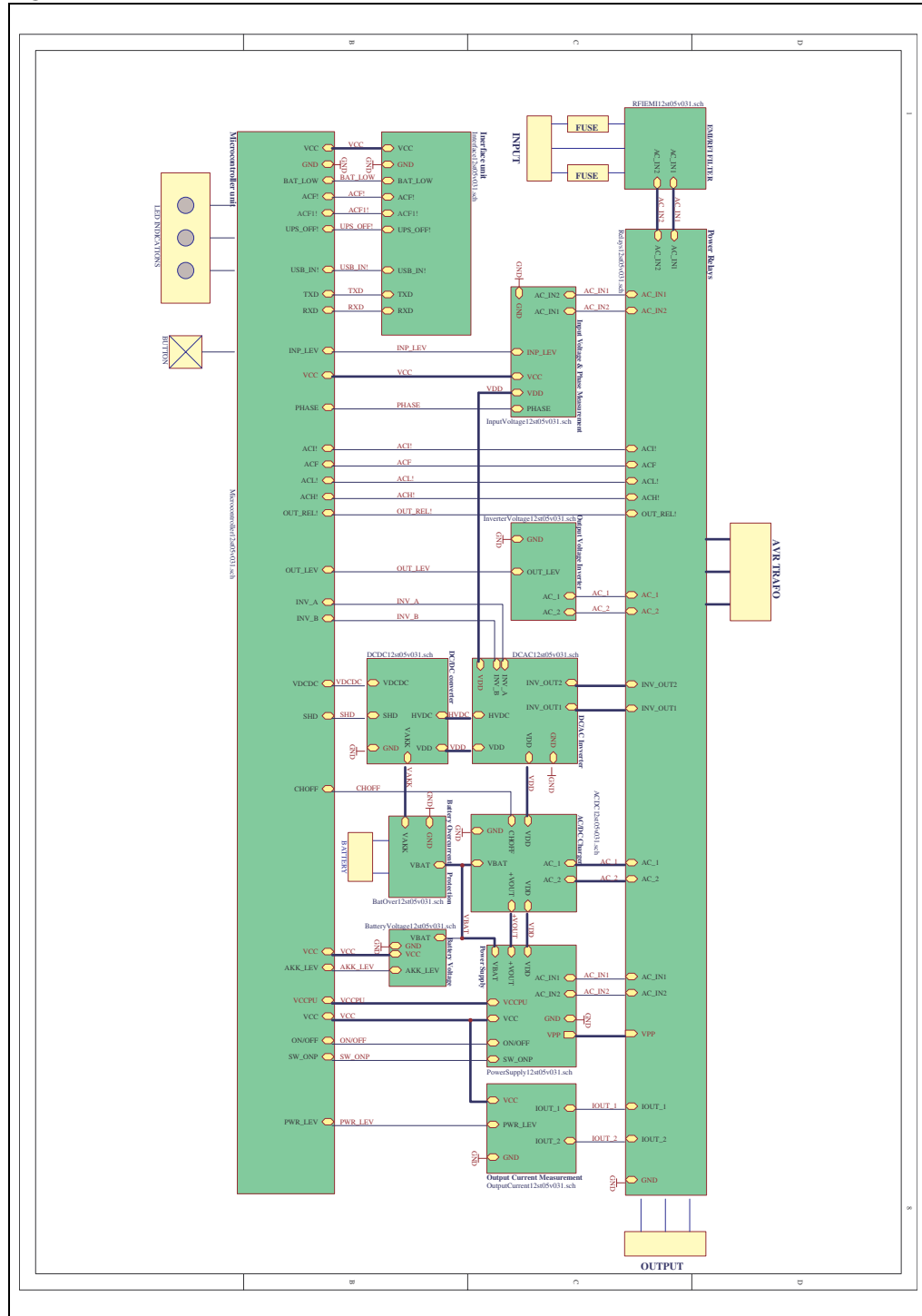
Description

This UPS reference design was built employing off-line topology with AVR boost and buck regulation of the mains. The inverter module contains the push-pull DC-DC converter and the DC-AC output full bridge generating a quasi-sine waveform.

A microcontroller controls all UPS functions. It monitors the mains parameters (input/output mains voltage and phase, output inverter voltage, battery voltage, output current and output power) in order to ensure the proper level of the output voltage.

1 Board schematic

Figure 1. Schematic



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
14-Apr-2008	1	Initial release.

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