



# EVLALTAIR900-M1

## Double output SMPS for power line applications using the ALTAIR04-900 primary controller

Data brief

### Features

- Universal input mains range: 90 - 264 Vac, frequency 45 - 65 Hz
- Double output voltage: 13 V @ 0.55 A and 3.3 V @ 100 mA peak power
- Optoless constant voltage - constant current output regulation
- Meets power line communication system specifications based on the ST7580
- Average efficiency: > 70%
- EMI: According to EN55022-Class-B

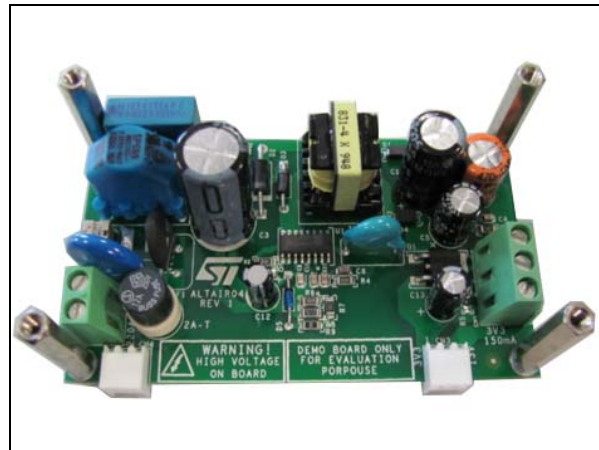
### Description

This board implements a 7.5 W double output wide range mains adapter with constant voltage - constant current, developed to build an innovative AC-DC adapter to supply a complete power line communication based on the ST7580.

The power supply provides a 13 V output voltage to supply the power line modem (PLM) and the analog circuitry, and a post-regulated 3.3 V to supply digital circuitry and an optional external microcontroller.

The board uses the new ALTAIR04-900, a quasi-resonant (QR) current-mode controller IC specifically designed for QR ZVS (zero voltage switching at switch turn-on) flyback converters, which combines a high-performance low-voltage PWM controller chip and a typical 16  $R_{DS(on)}$ , 900 V, avalanche-rugged Power MOSFET in the same package.

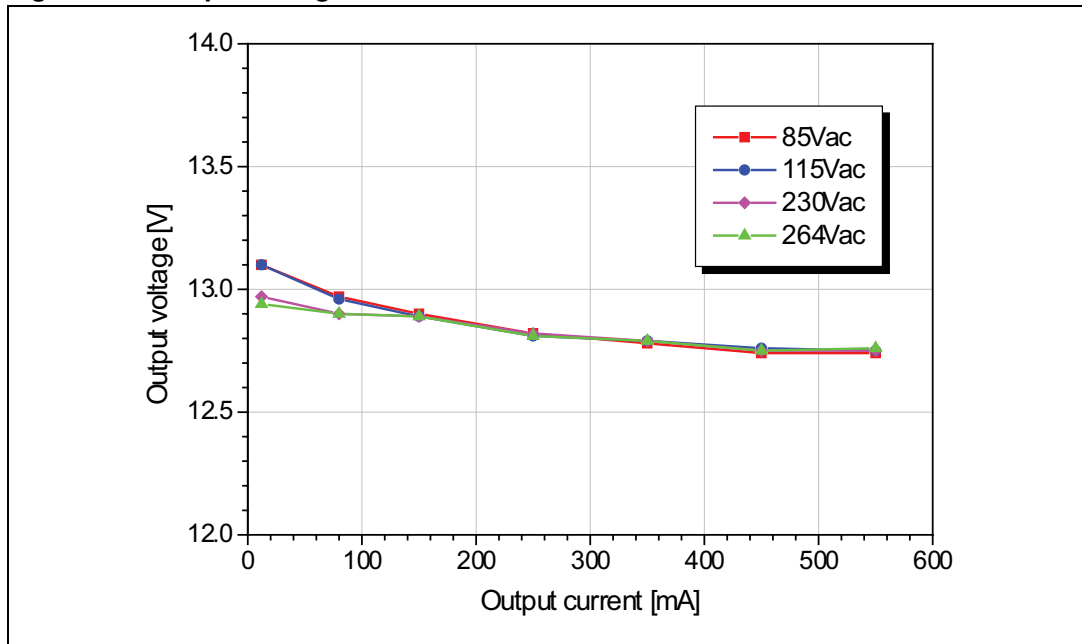
The device is capable of providing constant output voltage regulation using primary-sensing constant voltage loop (CV loop). This eliminates the need for the optocoupler and the secondary voltage reference while still maintaining quite accurate regulation.



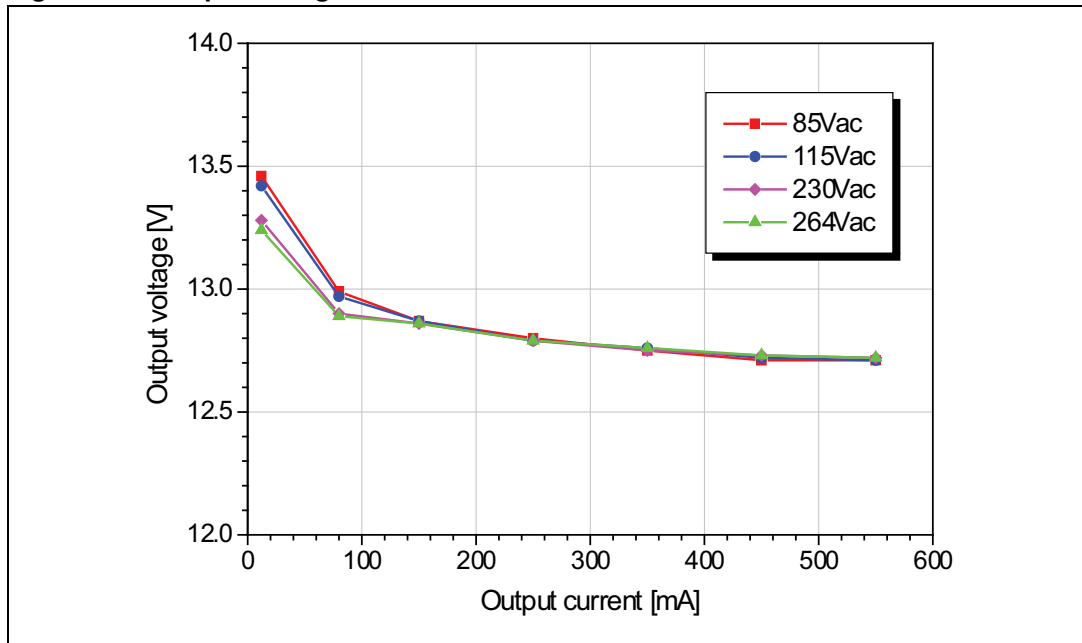
In addition, by using the primary constant current loop (CC loop), it is possible to set the maximum deliverable output current without any secondary components or current sensor.

The board implements several protections that considerably increase end-product safety and reliability: auxiliary winding disconnection (or brownout) detection, shorted secondary rectifier detection, and transformer saturation protection: all of which are in auto-restart mode.

**Figure 1. Output voltage characteristic with 3V3 @ 40 mA**



**Figure 2. Output voltage characteristic with 3V3 @ 80 mA**





# 1 Revision history

**Table 1. Document revision history**

Date	Revision	Changes
23-Dec-2011	1	Initial release.

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