

Evaluation board based on ST1PS03AQTR 400 mA nano-quiescent synchronous step-down converter with load switch



Features

- 1.8 to 5.5 V input operating range
- Up to 400 mA output current capability
- Tiny external components: L = 2.2 μ H typ
- Dynamically selectable output voltages from 1.6 to 3.3 V
- Output voltage Power Good
- Independent load switch (AUX control input)
- WEEE and RoHS compliant (hardware only)

Description

The **STEVAL-1PS03A** is an evaluation board for a smart converter design able to deliver up to 400 mA output current from a 1.8 V to 5.5 V input, with a dynamically adjustable 1.6 V to 3.3 V output voltage.

The board features the **ST1PS03AQTR** nano-quiescent miniaturized synchronous step-down converter which implements enhanced peak current control (PCC) and advanced design circuitry to minimize quiescent current.

The device embeds a controlled load switch to supply a subsystem with **VIN_AUX** voltage rail. The board demonstrates how highly efficient conversion can be achieved with just the **ST1PS03AQTR**, a 2.2 μ H inductor and two small capacitors.

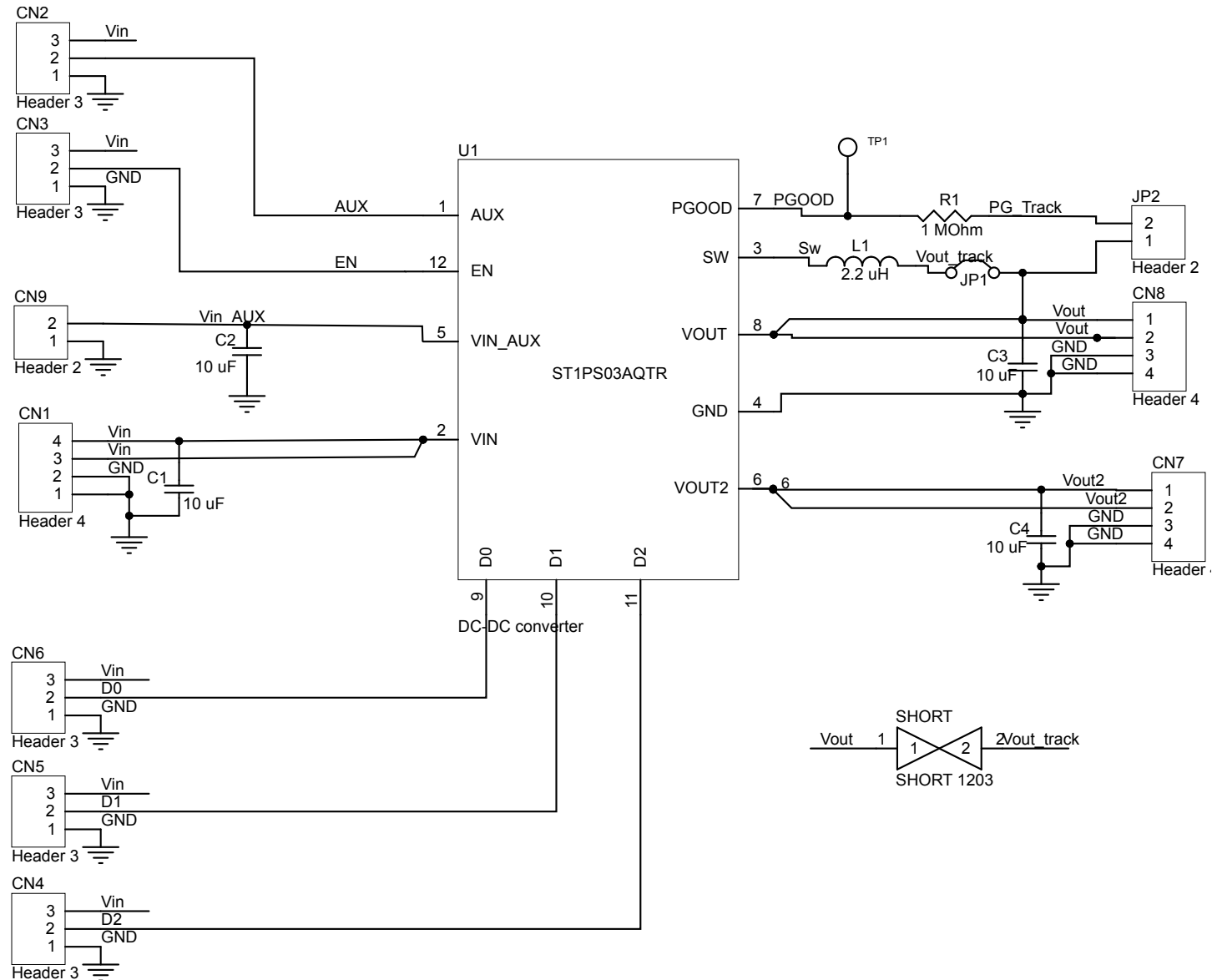
The board highlights key application benefits made possible by the **ST1PS03AQTR**, including high efficiency and small PCB size and thickness, and is ideal for power conversion solutions in wearable applications and fitness accessories, personal tracking monitors, smart watches, sports bands, energy harvesting, wireless sensors, industrial sensors, portable low power devices, single cell Li-Ion battery applications and Bluetooth® low energy and Zigbee applications.

The device used on this board is supplied in the thin TQFN12 (2.0x1.7 mm) package.

Product summary	
Evaluation board based on ST1PS03AQTR 400 mA nano-quiescent synchronous step-down converter with load switch	STEVAL-1PS03A
400 mA nano-quiescent synchronous step-down converter with digital voltage selection, Power Good and Load switch	ST1PS03AQTR
Applications	Power supplies and converters

1 Schematic diagrams

Figure 1. STEVAL-IPS03A circuit schematic



2 Board versions

Table 1. STEVAL-IPS03A versions

Finished good	Schematic diagrams	Bill of materials
STEVAL\$1PS03AA ⁽¹⁾	STEVAL\$1PS03AA schematic diagrams	STEVAL\$1PS03AA bill of materials

1. This code identifies the STEVAL-1PS03A evaluation board first version.

Revision history

Table 2. Document revision history

Date	Revision	Changes
19-Oct-2021	1	Initial release.

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