

Qi-based wireless power receiver reference design for wearable applications up to 2.5 W using STWLC68



Features

- Based on [STWLC68](#) wireless power receiver
- Designed according to Qi 1.2.4 specifications
- Constant 5 V output voltage (default setting)
- Up to 2.5 W output power
- Foreign Object Detection (FOD) supported
- 400 kHz I²C interface for communication with host system
- Compact 10x10 mm application area
- Complete kit includes receiver board, USB-to-I²C bridge dongle and GUI
- RoHS compliant

Description

The [STEVAL-ISB68WA](#) is a reference design for wearable applications based on the [STWLC68](#) wireless power receiver. The kit includes a receiver board with a small 15 mm diameter receiving coil and provides a constant output voltage with 2.5 W maximum output power.

The board supports Foreign Object Detection (FOD) for safe operation and is ready for immediate use when placed on a suitable wireless power transmitter.

An on-board LED indicates connection with the transmitter succeeds and enabled output voltage, and a programmable interrupt output is available to inform the host system in user applications.

The complete application is confined in a 10x10 mm PCB area and the layout is designed to facilitate probing and user customization.

A free [STSW-ISB68GUI](#) Graphic User Interface (GUI) is provided to monitor and configure the receiver on your PC using the USB-to-I²C dongle included in the kit.

Product summary	
reference design based on STWLC68 wireless power receiver for wearable applications	STEVAL-ISB68WA
Qi-compliant inductive wireless power receiver for 5W applications	STWLC68
GUI for developing applications using the STWLC68 wireless power receiver	STSW-ISB68GUI
Applications	Wireless Chargers Wearable

1 Layout of components

Figure 1. receiver board silk screens - top and bottom

U1: STWLC68 wireless power receiver

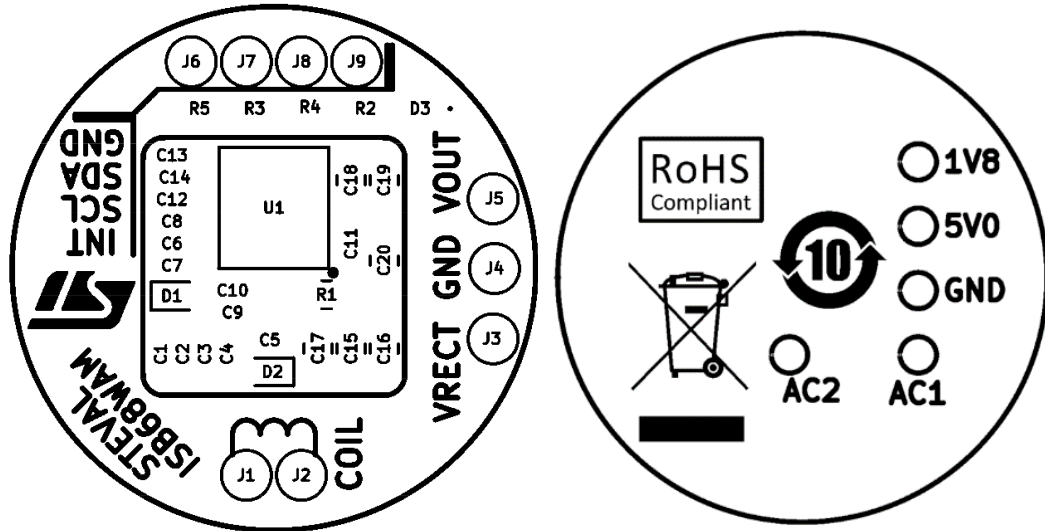
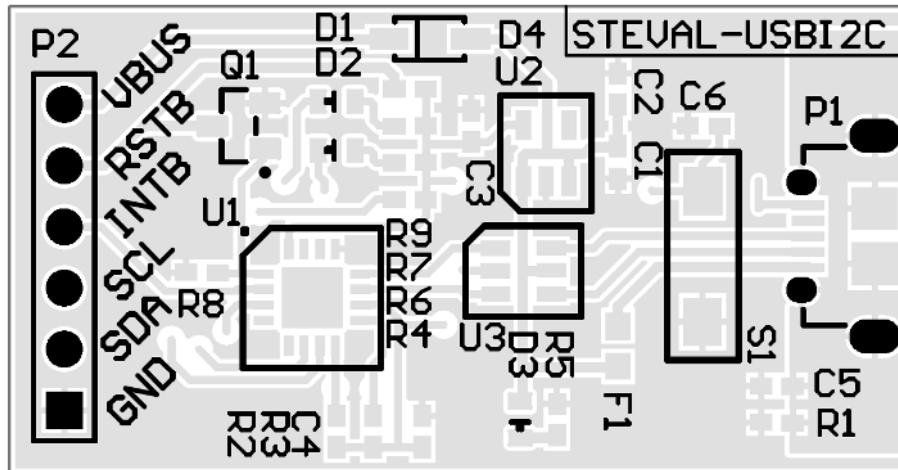


Figure 2. USB-to-I²C dongle silk screen

- U1: USB Interface IC
- U2: LDO voltage regulator
- U3: ESD Suppressor
- P1: USB connector
- P2: Connector for specific STWLC68 pins



2 Schematic diagrams

Figure 3. STEVAL-ISB68WA receiver board schematic diagrams

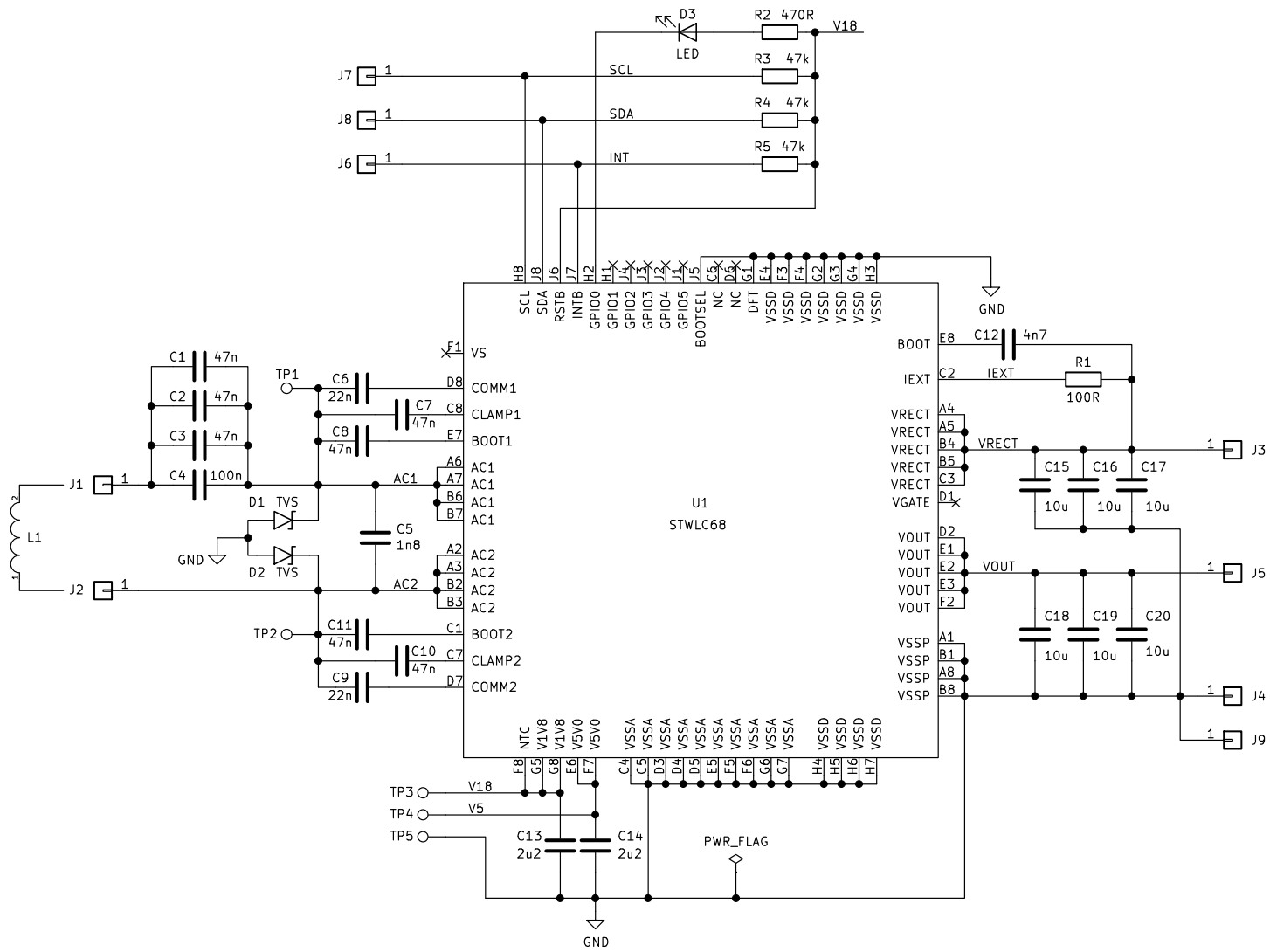
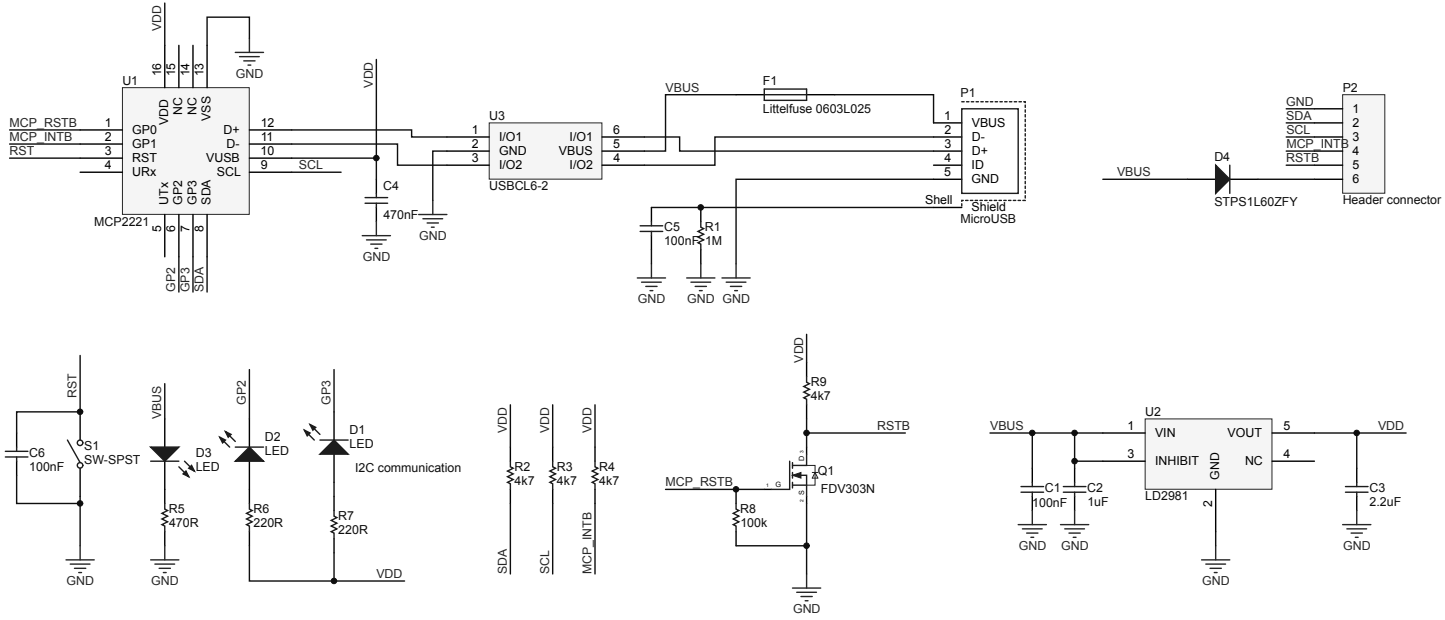


Figure 4. USB-to-I²C dongle schematic diagrams



Revision history

Table 1. Document revision history

Date	Version	Changes
10-Jan-2020	1	Initial release.
27-Jan-2020	2	Updated cover page image.

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