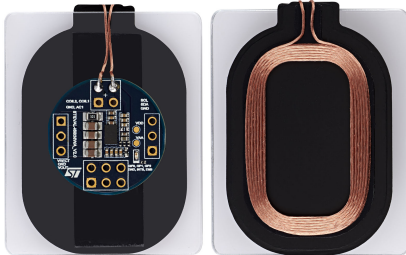


## Qi-1.3 compatible wireless power receiver reference design for 2.5W True Wireless Stereo (TWS) applications



Fully assembled board developed for performance evaluation only, **not available for sale**

### Features

- Power transfer up to 2.5W
- STWLC38 is Qi 1.3 compliant
- Integrated
  - High efficiency synchronous rectifier
  - Low voltage drop regulator with output current limit control
- Output 5 V baseline power profile
- Adaptive rectifier configuration (ARC) mode for enhanced spatial freedom
- Accurate voltage/current measurement for foreign object detection (FOD)
- On-chip thermal management and protections

### Description

The **STDES-WLC38TWS** reference design is based on **STWLC38**. It is designed for wireless power receiver application and it allows you to quickly start your 2.5 W Qi-BPP compatible wireless charging receiver projects.

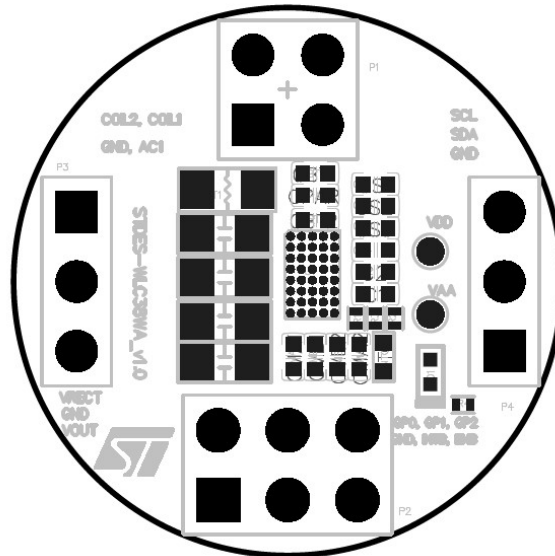
This reference design document provides sufficient information to develop a project for up to 2.5 W charging using baseline power profile (BPP).

Through the I<sup>2</sup>C interface you can access and modify different configuration parameters, tailoring the operation of the device to the needs of custom applications.

Using an on-board USB-to-I<sup>2</sup>C bridge, you can monitor and control the **STWLC38** thanks to the **STSW-WPSTUDIO** graphical user interface (GUI).

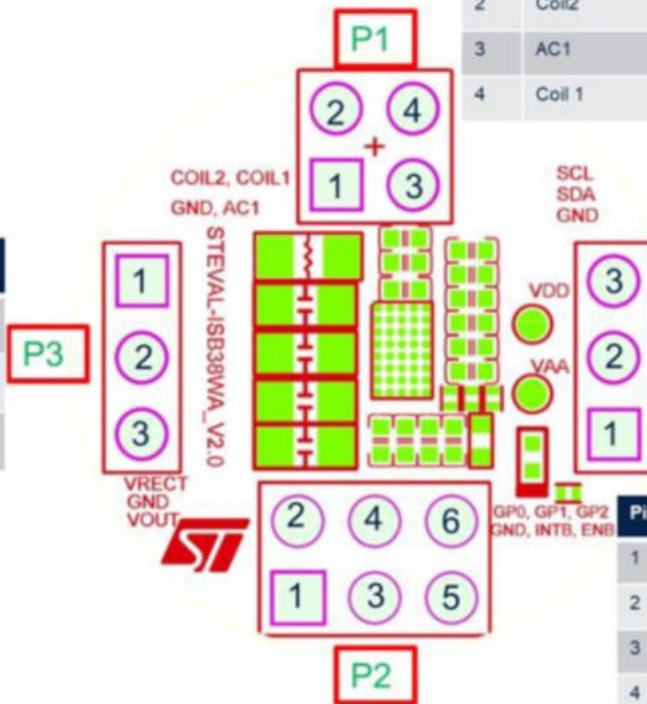
Product summary	
Qi-1.3 compatible wireless power receiver reference design for 2.5W True Wireless Stereo (TWS) applications	<a href="#">STDES-WLC38TWS</a>
Firmware for STDES-WLC38TWS	<a href="#">STSW-WLC38FWBPP</a>
Qi-compliant inductive wireless power receiver for up to 15W applications	<a href="#">STWLC38JRM</a>
GUI for developing applications using the STDES-WLC38TWS evaluation board	<a href="#">STSW-WPSTUDIO</a>
Applications	<a href="#">Wireless Chargers</a>

# 1 Component layout



Pin	Description
1	Ground
2	Coil2
3	AC1
4	Coil 1

Pin	Description
1	VRECT
2	Ground
3	VOUT

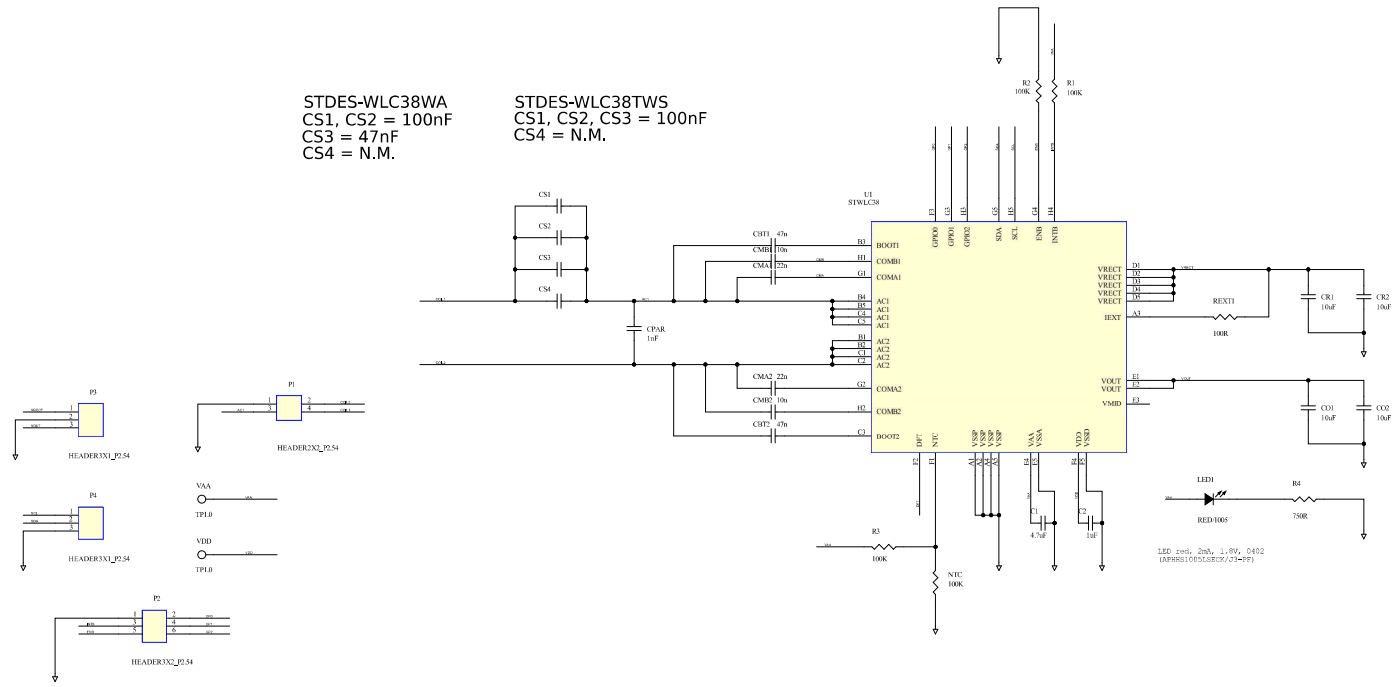


Pin	Description
1	Ground
2	SDA
3	SCL

Pin	Description
1	Ground
2	GPIO0
3	INTB
4	GPIO1
5	ENB
6	GPIO2

## 2 Schematic diagrams

Figure 1. STDES-WLC38TWS circuit schematic



## Revision history

**Table 1. Document revision history**

Date	Revision	Changes
07-Mar-2023	1	Initial release.
25-Aug-2023	2	Modified title in cover page. Updated cover image, product summary and <a href="#">Section 2 Schematic diagrams</a> .

**IMPORTANT NOTICE – READ CAREFULLY**

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgment.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to [www.st.com/trademarks](http://www.st.com/trademarks). All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2023 STMicroelectronics – All rights reserved