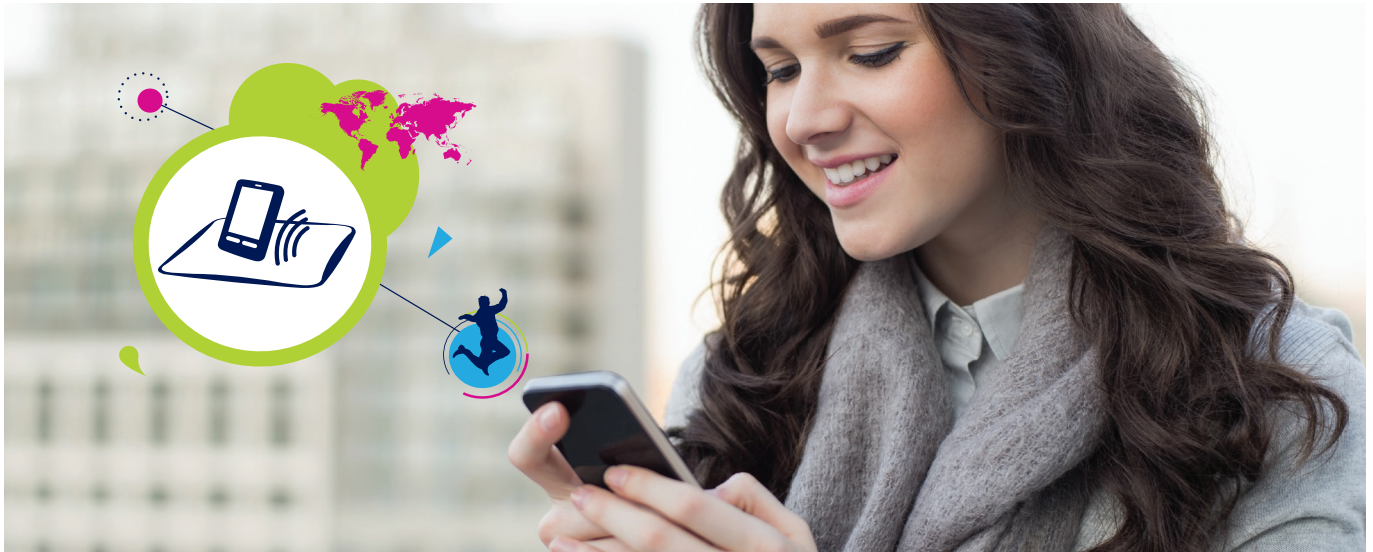


STWBC

Wireless battery charger



Digital controller for wireless battery charger transmitters lets customers personalize end applications without the need for an external MCU

Like Wi-Fi hotspots, WBC transmitters are expected to become ubiquitous in hotels, airports, cafes and public places, allowing consumers to leave their cables at home and top up batteries in their portable/ wearable devices wherever they are by means of electromagnetic induction used to transfer power from a WBC transmitter (TX) to a receiver (RX) in the device.

STWBC performs all the functions for transmitter control, ensuring compliancy with the leading standards in the market and providing customers with a turnkey Qi-certified solution for a fast go-to-market strategy, or with an environment to build personalized solutions.

KEY FEATURES AND BENEFITS

- Qi 1.2 Certified
- A11 topology, baseline profile
- 5V operating voltage for USB connection
- Compliant with 5 W class of wireless power applications
- Smart standby:
 - Energy efficient: 3 mW consumption
 - Safe: FOD always active
- Digital feedback with foreign object detection (FOD)
- 2 firmware options:
 - Turnkey solution for quick design
 - Application programming interfaces (APIs) for application customization
- Support tools:
 - Qi Certified evaluation board
 - Graphical interface

KEY APPLICATIONS

- Wireless battery charger (WBC) transmitters for 5 W class applications: mobile phones, healthcare and handheld devices



WIRELESS BATTERY CHARGER

The STWBC digital controller for wireless battery charger (WBC) transmitters offers the most flexible and efficient solution for controlling power transfers from a WBC transmitter (TX) to a receiver (RX) in WBC-enabled phones, wearables, and other battery-powered devices that use electromagnetic induction for recharging.

STWBC performs all the essential functions for transmitter control: it is able to precisely control the amount of transmitted power to match the requirements of the receiving unit in terms of maximizing the efficiency of the power transfer and minimizing any increase in operating temperature.

The digital feedback between TX and RX units also allows the detection of metal objects close to the receiver (foreign object

detection – FOD) that could result in potential hazards, enabling the STWBC to stop power transmission when detected.

STWBC-enhanced algorithms provide a Smart Standby feature which guarantees efficiency and safety while the application is waiting for a wireless power receiver.

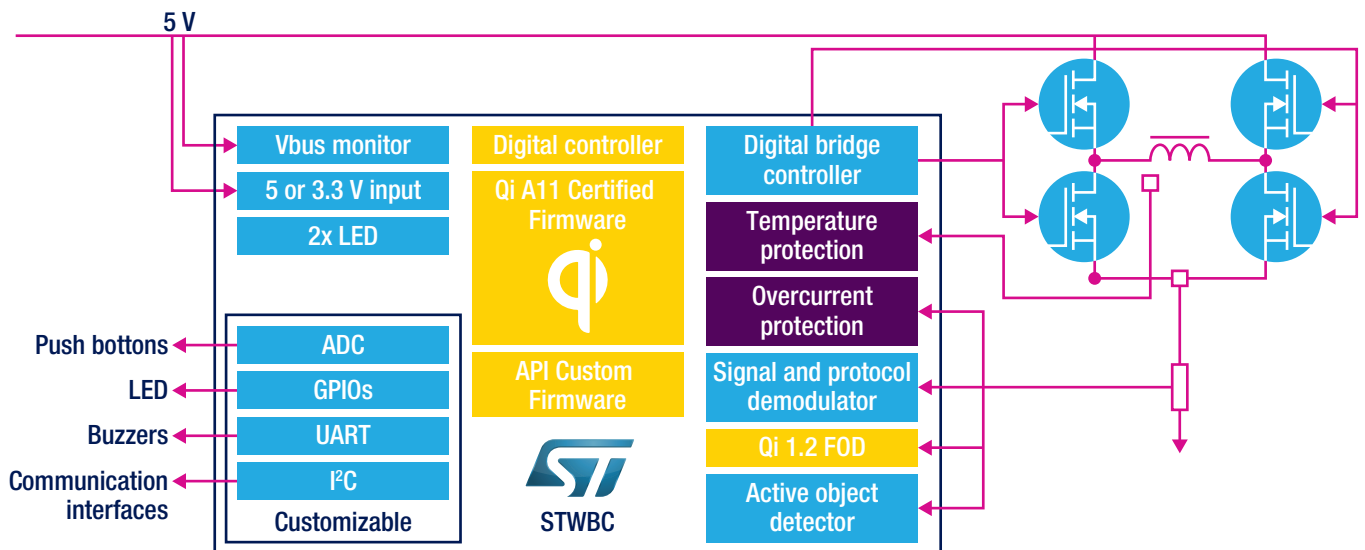
During Standby operation, the STWBC offers a total application consumption of 3 mW while maintaining FOD active.

Uniquely, the STWBC comes with two firmware options to offer customers the ability to personalize their end product without the need of external microcontrollers: a turn-key Qi 1.2 A11-certified solution, fully interoperable with Qi-enabled mobile phones and an application programming interface (API) to customize the underlying firmware,

for example to modify the behavior of LEDs or GPIOs in response to receiver behavior and to support I²C and UART communication within a network.

To support customers in building their applications, a complete ecosystem is available including a Qi 1.2 A11-certified reference design board (STEVAL-ISB027V1), API libraries and documentation to customize software, and a powerful Graphical Interface provides access to real-time data as well as easy access to STWBC parameters.

STWBC OPERATIONAL BLOCKS AND Qi 1.1.2 A11 CONFIGURATION



DEVICE SUMMARY

Order code	Package	Packing
STWBC/STWBCTR	VFQFPN32	Tube/Tape & reel

DEVELOPMENT ENVIRONMENT

Design resources	Description
STEVAL-ISB027V1	Q1 A11 certified wireless charger transmitter reference design
STSW-ISB027FW	Firmware for STEVAL-ISB027V1 QiA11 wireless power transmitter evaluation board based on STWBC
UM1861	Q1 A11 certified wireless charger transmitter reference design user manual
STSW-ISB027GUI	Graphical user interface, Q1 A11 certified wireless charger transmitter reference design (STEVAL-ISB027V1)



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