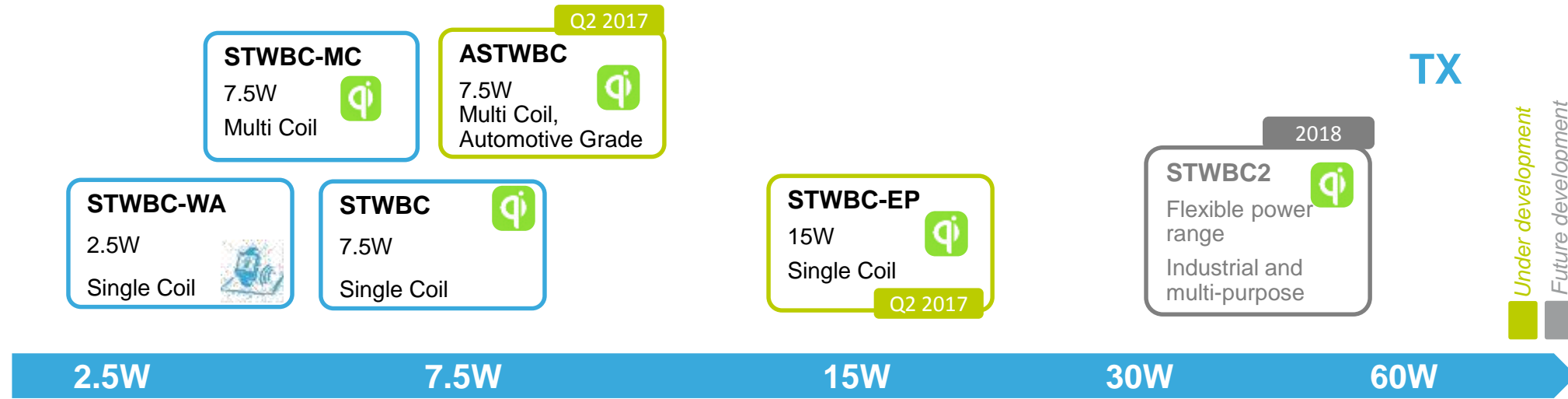


ST Wireless Power TX Roadmap

A broad family for many different applications

TX

- IoT
- Consumer
- Tools
- Industry
- e-Vehicle



Under development
Future development

STEVAL-USB027
Smart Phone, 5W

STEVAL-USB028
Smart Phone, Automotive, 5W

STEVAL-USB04x
Extended Power Profile (15W)
Smart Phone, Tablet and Tools, 15W

MULTICOIL VERSION Q1 2018

AVAILABLE ON REQUEST

IN STORE ON JUNE 2017



Wearable Solution

Wireless power TX-RX kit – 1 Watt wireless delivery

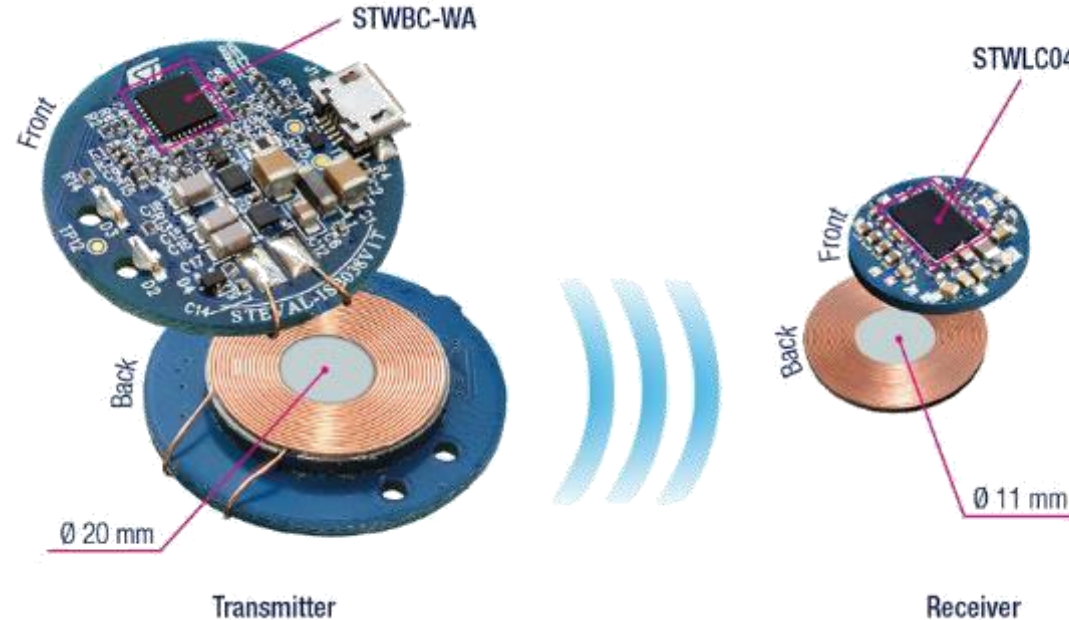
Transmitter: STWBC-WA

USB as power source
5 V input, up to 0.5 A

Smart standby
Automatic receiver recognition
FOD for increased safety

Minimal BOM thanks to half bridge architecture

Configurable via API for application customization via GUI



Receiver: STWLC04

• 5V fixed output voltage
• Li-Ion direct battery charging

• Space saving solution with optimized BOM
• Coil Rx – TDK WR1111180-36F5-B1

Max. Z @ 1 W: 3 mm

43% total system efficiency with small coils

Flip Chip 3.1x4.7mm²



5W Consumer Solution

Wireless power reference design: plug and play

STWBC: Transmitter



Ubiquitous: 5 V USB powered

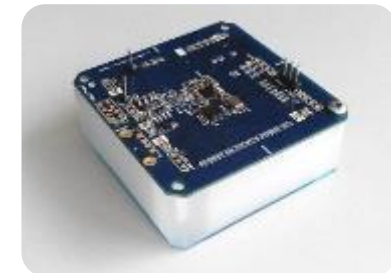
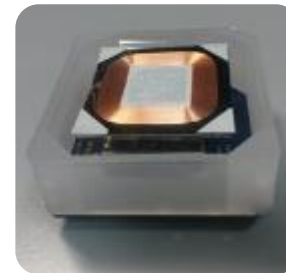
Plug and play: Qi 1.2 LP certified (5 W)

Smart Standby: 3 mW consumption with FOD

Flexible: customizable via GUI or software API



Receiver: STWLC03



Energy friendly: Integrated high-performance buck converter and synchronous rectifier

Plug and play: certification with Qi (5 W) and PMA standards (7.5 W)

Safe: enables safe operation with advanced FOD

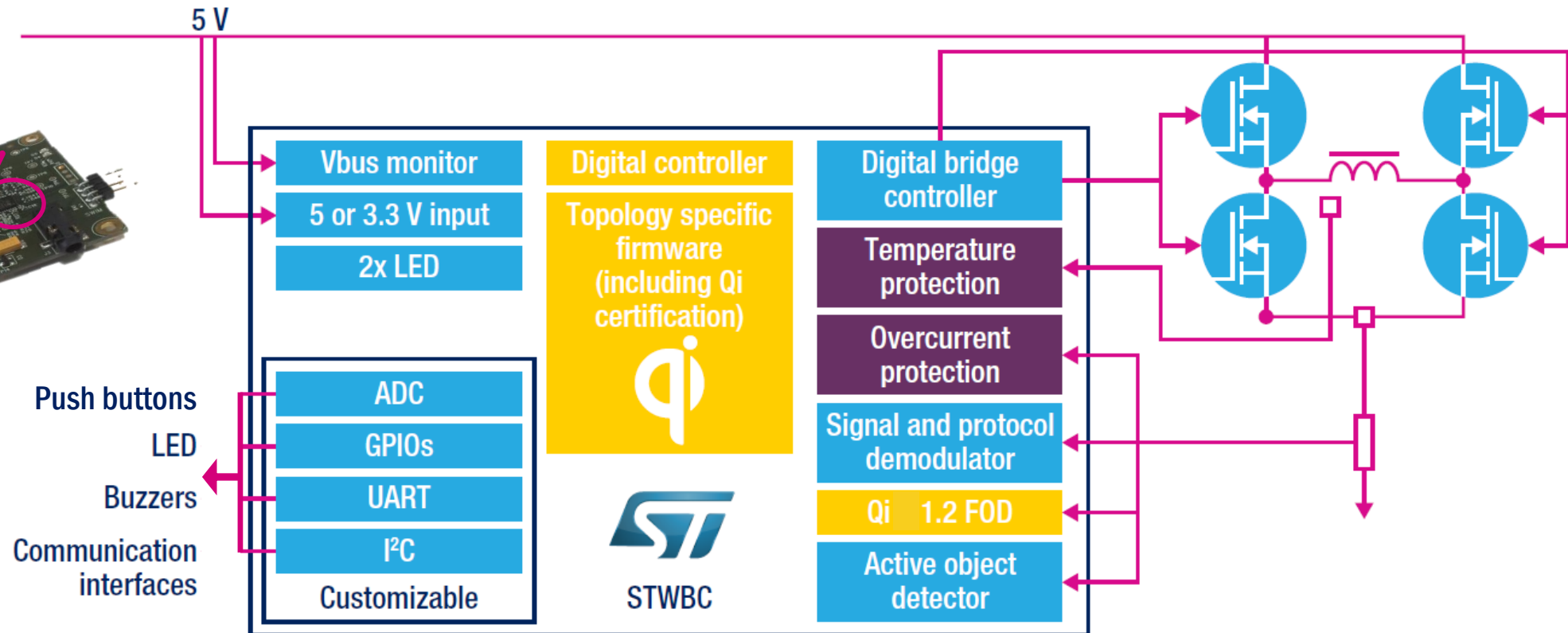
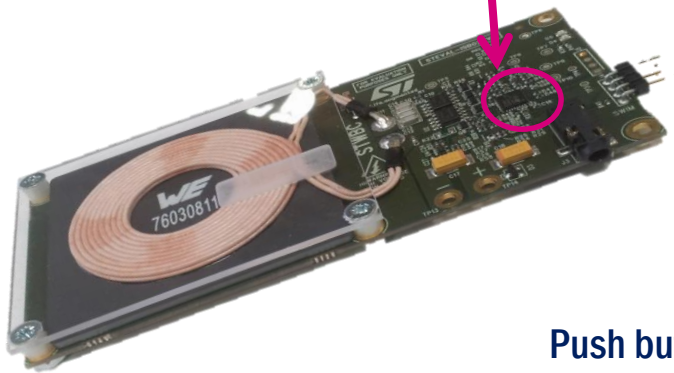
Flexible: supports different battery chemistry and direct charging



STWBC – 5W Transmitter


Flexible, efficient, compliant with leading standard

STWBC OPERATIONAL BLOCKS AND Qi 1.2 A11 CONFIGURATION



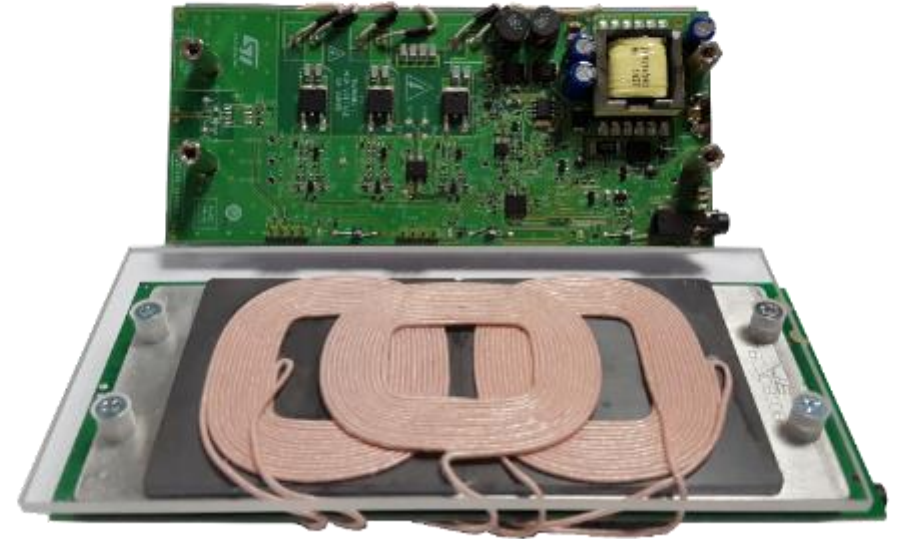
ASTWBC Transmitter for Infotainment

Qi platform for Automotive - Infotainment

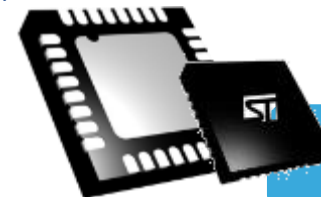
- **Power rate**
 - 5W typical (on RX side)
- **Standards support**
 -  Qi 1.2 certified (A34 topology)
- **Wireless Charging Features**
 - 3 coils support
 - Fixed frequency switching
 - Foreign Object Detection (FOD)
 - Operating also during stand-by
 - Active presence detector
- **Solution features**
 - Dynamic Voltage Adaptation
 - Support variable Vin between 5V to 15V (12V certification)
 - Digital ASTWBC driven Flyback DC/DC
 - 2 layers PCB
 - Turn Key or customization via ST

Bottom side

ASTWBC controlling: Flyback, Half Bridge, coil selectors, Qi protocol and FOD



STEVAl-ISB028V1
Available on request



ASTWBC (Q2'17): automotive grade
STWBC-MC: Industrial grade



15W Consumer solution

15W Wireless power reference design: plug and play



Half bridge topology allows simple and low cost multi-coil design.

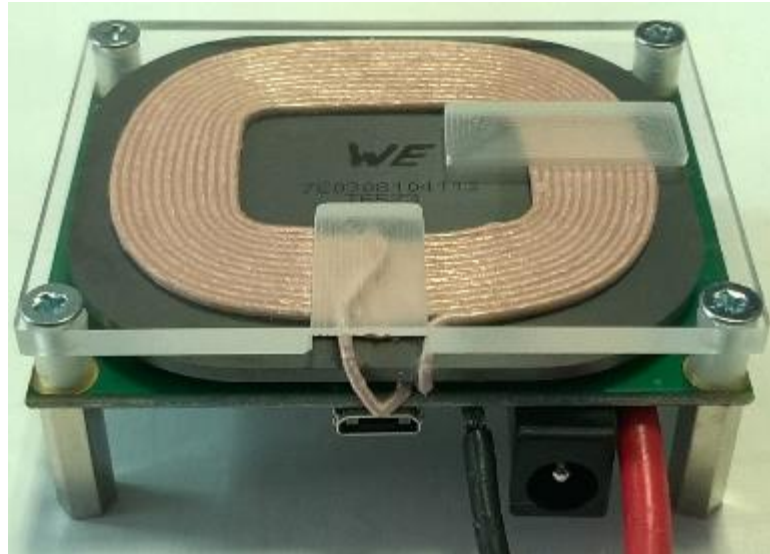
Dynamic BPP/EPP mode depending on input voltage

Better FOD based on Q-factor measurement (ST patent)

Popular A6 coil with large active charging area (24x31mm)

Low standby consumption (16mW)

Flash Memory based



STEVAL-ISB04x
Available in June 2017

- Qi 1.2.3 EPP compliant*
- Wide input voltage range with DC/DC
- Smart Standby with FOD
- Plug and play: customizable via GUI

* Certification ongoing



STWBC-EP architecture

5V to 13V input – 5W to 15W output – Boost + Half Bridge



Single or multicoil design

Frequency / Duty Cycle / Voltage Control Method

Robust triple path demodulation provides improved interop

Inductor-based DC/DC (Boost)
Output = 7~16V with LP Rx
Output = 11~24V with EP Rx

BPP mode for $V_{in} < 9V$
EPP mode for $V_{in} > 9V$

