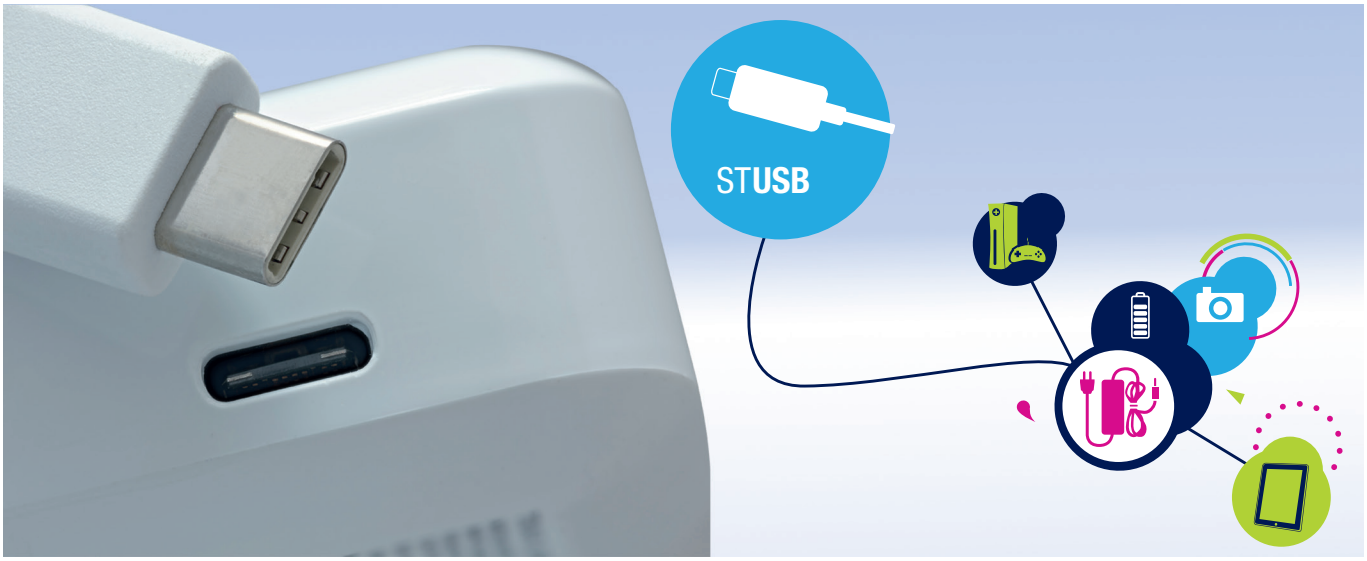
USB Type-C™ PD controllers
Protect your devices from electrical hazards



Certified USB Power Delivery controller ICs with built-in over-voltage protection for seamless and safe migration to Type-C

Combining low power consumption with robust, high-voltage capability, STUSB47 series and STUSB1602 USB Type-C PD controllers autonomously support full USB PD negotiation. Manufactured using ST's high-performance analog CMOS process, these ICs offer build-in over-voltage protection up to 22 V for the CC lines and up to 28 V for the high-voltage pins to prevent damage in the event of accidental short-circuit to V_{BUS}.

KEY FEATURES

- High-voltage analog ICs
- Short-to-V_{BUS} overvoltage protection
- High integration:
  - V_{CONN} switch
  - Discharge path
  - V_{BUS} gate drivers
  - V_{BUS} monitoring
  - Dead battery support

KEY BENEFITS

- Plug and Play
- Easy device configuration
- Reliable and certified hardware
- Robust and safe for devices and users

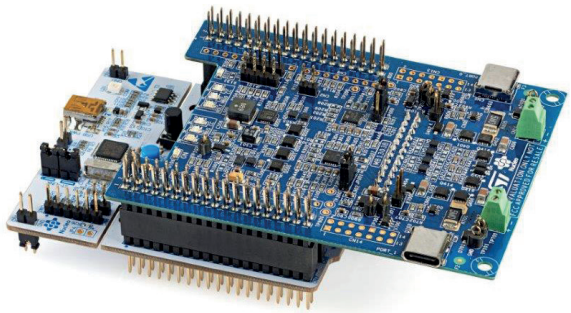
KEY APPLICATIONS

- AC/DC power supplies
- DC/DC power hubs
- Power banks
- Docking
- TV, displays
- Set-top-boxes
- Gaming
- Cigarette lighter adaptors (CLA)
- Consumer USB devices

STUSB1602

USB Type-C controller with power delivery PHY and BMC driver

The STUSB1602 is an analog front-end suitable for use as a companion chip for MCU (such as STM32) or application processor. It ensures pure Type-C operations in stand-alone while guaranteeing noise free USB PD communications and high voltage protection of the Type-C port.
Certified both as a Sink and as a Source in USB PDr2.0, STUSB1602 is compatible with PDr3.0.



Dual ports DRP evaluation kit, Order code: P-NUCLEO-USB002

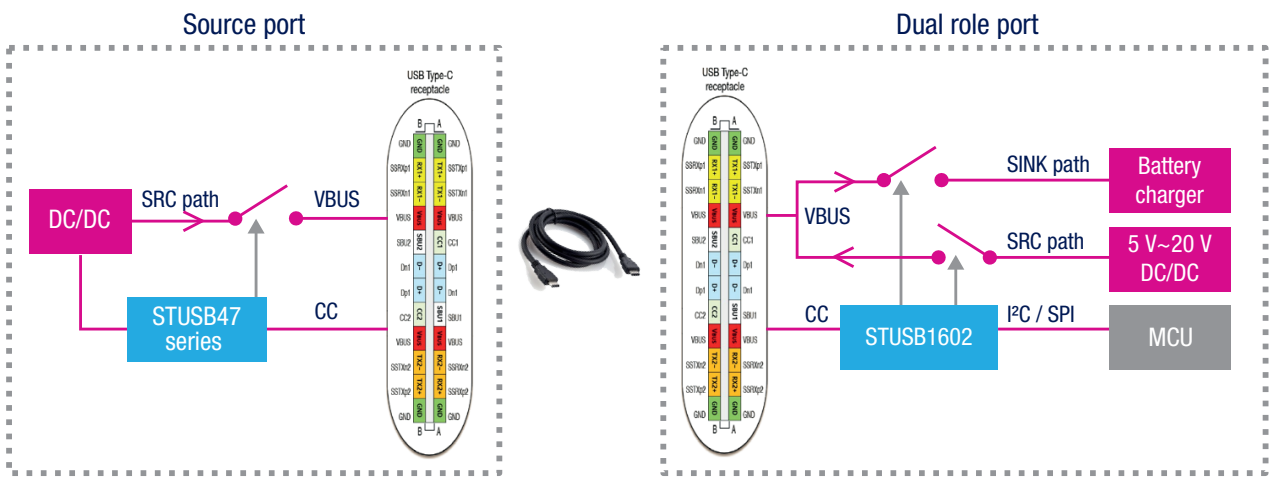
STUSB47 SERIES

Stand-alone USB PD source controller solution

The STUSB47 series targets power-source applications such as power supplies, power hubs, docking stations, smart plugs, and displays. It integrates all the circuitry needed to negotiate Power Delivery with connected devices, and can support up to 5 Power Delivery profiles (PDO). Through its embedded non-volatile memory, it is fully customizable and can handle the entire connection setup without the need for an MCU.
For multi-port applications, an I²C interface allows the connection of multiple STUSB47 ICs to an MCU to implement power-sharing algorithms.

Source PD controller with DC/DC evaluation board, Order code: STEVAL-ISC003V1

BLOCK DIAGRAM



Power supply autorun USB PD

Consumer device full feature USB PD