Combining low power consumption with robust, high-voltage capability, STUSB47 and STUSB45 USB Type-C Power Delivery controllers autonomously support full USB PD negotiation for Source and Sink applications respectively. Manufactured using ST’s high-performance analog CMOS process, these ICs offer built-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 an accidental short-circuit to \( V_{bus} \).

ST is a member of the board of directors of the USB-IF (Implementers Forum).

**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**
- Source
  - AC/DC power supplies
  - DC/DC power hubs
  - Power banks
  - Docking
  - TV, displays
  - Set-top-boxes
  - Gaming
- Sink
  - Portable consumer devices
  - Camcorders and cameras
  - IoT and drones
  - Battery-powered devices and accessories
  - Industrial and LED lighting
  - Healthcare, wearables and handheld devices
  - Any USB Type-C sink device

Certified Source and Sink stand-alone controllers for seamless and safe migration to USB Type-C
**STUSB4500**

*Stand-alone USB PD controller for Sink applications*

STUSB4500 addresses USB Type-C power-sink devices. Based on the default power profiles (PDO) configuration stored in internal non-volatile memory, this stand-alone controller IC implements proprietary algorithms in order to negotiate a Power Delivery contract with a source without any internal or external software support (Auto-run mode), making it the ideal device for automatic High Power Profile charging, especially from a Dead Battery Power state. Certification ID: 1000133

**STUSB4700/10**

*Stand-alone USB PD controller for SOURCE applications*

The STUSB47 series target 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 profiles (PDO). Through its embedded non-volatile memory, it is fully customizable and can handle the entire connection setup without the need for a microcontroller. For multi-port applications, an I2C interface allows the connection of multiple STUSB47 ICs to a microcontroller to implement power-sharing algorithms. STUSB4700 Certification ID: 1030023 STUSB4710 Certification ID: 1000125

Würth Elektronik connector 63272330001 certification ID: 5,200,000,116

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**BLOCK DIAGRAM**

Source port

USB Type-C receptacle

Power supply

Stand-alone PD controller

Sink port

USB Type-C receptacle

Consumer device

Stand-alone PD controller

DC/DC

STUSB47

V_BUS

CC

Sink PD controller evaluation board

Order code: STEVAL-ISC005V1

Source PD controller with DC/DC evaluation board

Order code: STEVAL-ISC004V1

Passive components and connectors supplied by Würth Elektronik

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Order code: FLUSBC0618
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