

## USB-C™ Port Controller

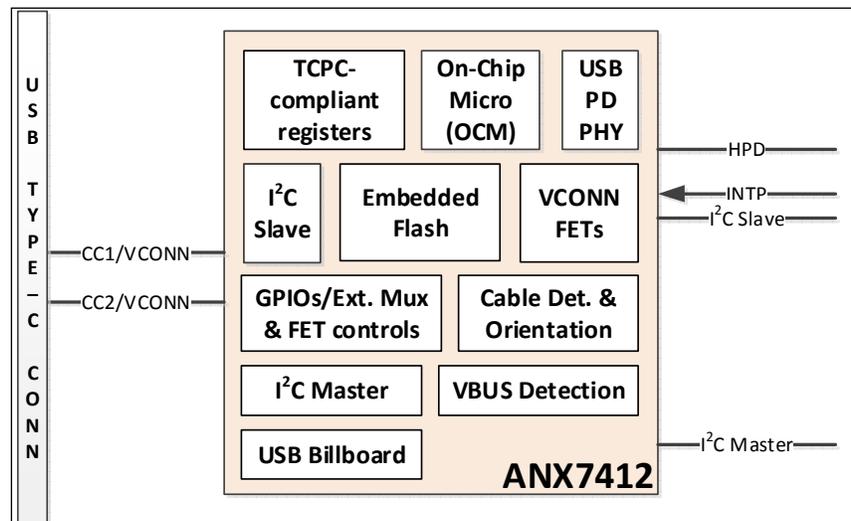
ANX7412 is a USB Type-C™ (USB-C) Port Controller that complies with the latest USB-C (r1.2) and USB-PD v3.0 (r1.0) specifications. ANX7412 integrates the logic to manage cable attach and detach, orientation, and role detection. The on-chip microcontroller (OCM) facilitates USB-PD v3.0 messaging for fast charging, DisplayPort™ (DP) Alternate Mode (Alt Mode), and Vendor-Defined Messages (VDMs). ANX7412 integrates the MOSFETs for powering VCONN and the signals required to control external VBUS load switches. ANX7412 can be configured as a Downstream Facing Port (DFP) or a Dual-Role Port (DRP), making it an ideal solution for USB-C receiver ports such as dongles, docks, HDTV, monitors, and projectors. ANX7412 supports a TCPC-compliant register interface and utilizes its I<sup>2</sup>C Slave port for communication with an upstream embedded controller, CPU, or AP. ANX7412 is powered from a single flexible supply rail at 3.3V and is available in small QFN packages.

### Features

- TCPC-compliant hardware interface
- Supports DFP and DRP modes for Host-only or Dual-Role applications
- Integrated VCONN FETs
- Built-in 10-bit ADC to monitor VBUS voltage and current
- Integrated Billboard
- Dedicated control signals for VBUS Source FET, VBUS sink FET, and VBUS auto discharge circuitry
- Serial and debug interfaces
  - I<sup>2</sup>C Master/Slave interface
- Industry standard compatibility
  - USB Type-C r1.2 specification
  - USB Power Delivery v3.0 r1.0 specification
  - DisplayPort 1.4 specification
  - DisplayPort Alternate Mode over USB Type-C r1.1 specification
  - Universal Serial Bus (USB) Type-C Port Controller Interface r1.0 specification
- Low-power design
  - Single supply at 3.3V
  - Dedicated supply power pin for flexible I/O power – 1.8V or 3.3V
  - Ultra-low power consumption (typical 77uW) in standby mode
- On-chip microcontroller with reprogrammable memory for USB-PD v3.0 engine
  - 64K bytes SRAM for firmware execution
  - 128K bytes Flash for firmware storage
  - PDFU function for firmware updating
- Dead battery detection support
- Package offered: 28-pin QFN, 4mm x 4mm, 0.90mm Z-height, pin-pitch: 0.4mm

### Applications

Dongles, docks, HDTV, monitors, and projectors



## Related Products

Part Number	Description
ANX7411	USB Power Delivery (USB-PD) v3.0 port controller for Source-side
ANX7447	USB Power Delivery (USB-PD) v3.0 port controller with integrated USB/DP mux (6x4)

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