![analogix — Bring Vision to Life]

USB-C™ Port Controller

ANX7411 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. ANX7411 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). ANX7411 integrates the MOSFETs for powering VCONN and the signals required to control external VBUS load switches. ANX7411 can be configured as a Downstream Facing Port (DFP) or a Dual-Role Port (DRP), making it an ideal solution for various applications such as notebooks, desktops, and 2-in-1 PCs. ANX7411 supports a TCPC-compliant register interface and utilizes its I2C Slave port for communication with an upstream embedded controller, CPU, or AP. ANX7411 is powered from a single flexible supply rail at 3.3V and is available in small QFN packages.
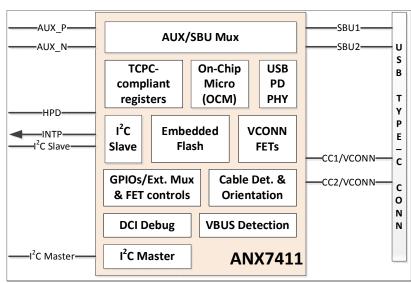
Features

- 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
- AUX CH/SBU Mux
- Dedicated control signals for VBUS Source FET, VBUS sink FET, and VBUS auto discharge circuity
- Serial and debug interfaces
  - I2C 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
  - QFN-28, 4mm x 4mm, 0.90mm Z-height, 0.4mm pin-pitch

Applications

Notebooks, desktops, and 2-in-1s

Related Products

Part Number	Description
ANX7447	USB Type-C Crosspoint Switch with On-chip Microcontroller