![analogix — Bring Vision to Life]

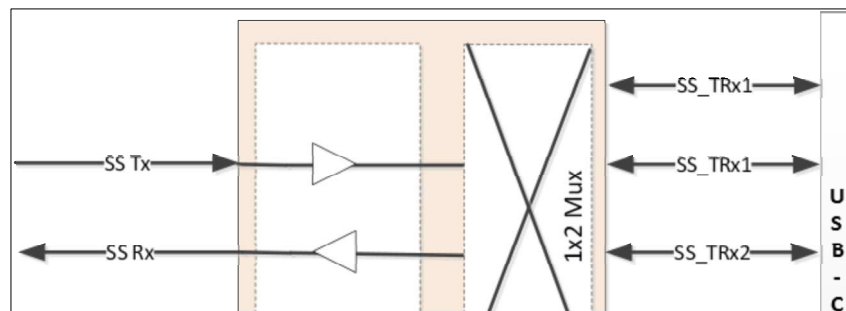# 10G Active Mux (1x2) with Integrated Re-timer for USB 3.2

ANX7431 is a USB3.2 Gen2 10G active mux with integrated re-timer capable of recovering the USB signals with loss compensation of up to 23dB. ANX7431 also integrates a mux (1x2) for USB Type-C™ (USB-C™) applications. ANX7431 supports Separate Reference Clock Independent SSC (SRIS) and Bit-Level Re-timer (BLR) architectures for a hybrid implementation for Gen 1 and Gen 2. SRIS re-timers eliminate jitter transfer and guarantee Gen 2 operation. Host (source) and device (sink) USB-C data-only applications are fully supported by ANX7431 with built-in intelligent switching. With the intelligent digital switching, ANX7431 ensures the enhanced signals from the re-timers are preserved and outputted over the USB-C connector.

Features

- Built-in re-timer
  - Integrated re-timer for USB 3.2 up to Gen2 @ 10Gbps
  - Supports both Separate Reference Clock Independent SSC (SRIS) and Bit-Level Re-timer (BLR) Architectures of USB 3.2 Specification (Appendix-E)
  - Supports both host (source) and device (sink) applications in USB-C subsystems
  - Loss compensation to recover up to 23dB channel loss
- Integrated mux
  - Digital (1x2) mux switches USB signals and preserves enhanced signal output over USB-C connector
  - Mux control input through I2C commands from external I2C master (or, optionally through FLIP/USB_EN pins)
- Integrated Reference CLK
- Serial and debug interfaces
  - I²C Slave interface, up to 1MHz, for mux and re-timer configuration

- Industry standard compatibility
  - USB 3.2 specification, Appendix E
  - USB Type-C r1.2 specification
  - Intel USB 3.2 Repeater and Active Switch specification
- Low-power design
  - Analog power supply at 1.8V
  - I/O power supply at 1.8V
  - Core power supply at 1.2V
- Package
  - QFN-50, 4.7mm x 6.4mm, 0.90mm Z-height, 0.35mm pin-pitch
- Commercial temperature range of 0C to 70C

Applications

Notebooks, desktops, workstations, servers, docking

Related Products

Part Number	Description
ANX7433	10G Active Mux (1x2) with Integrated Re-timer and CC Detection for USB 3.2
ANX7443	10G Active Mux (6x4) with Integrated Re-timers for USB3.2/DisplayPort
ANX7451	10G Active Mux (4x4) with Integrated Re-timers for USB3.2/DisplayPort
ANX7491	10G USB 3.2 Re-timer (1-Port)
ANX7497	DisplayPort 4-lane Re-timer

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