

10G Active Mux (6x4) with Integrated Re-timers for USB 3.1/DisplayPort™

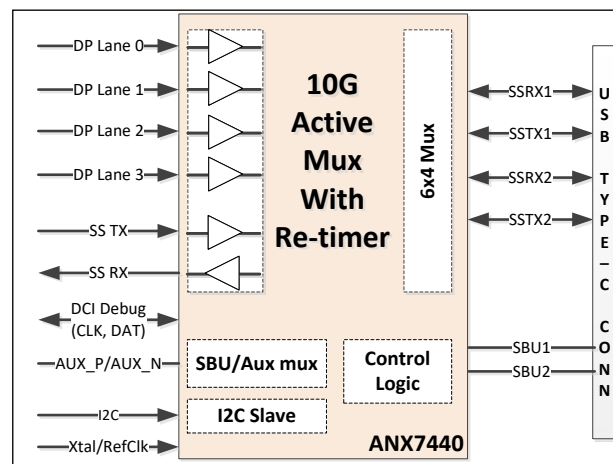
ANX7440 is a re-timing mux capable of switching DisplayPort (DP) and USB 3.1 Gen 2 10Gbps signals to support a single USB Type-C™ (USB-C™) port. ANX7440 has built-in re-timers to recover both the USB and DP signals with loss compensation of 23dB for USB and up to 27dB for DP. ANX7440 supports Separate 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. Digital muxing (6x4) is supported by ANX7440 to ensure the enhanced signals from the re-timers are preserved and outputted over the USB-C connector. ANX7440 integrates the SBU/AUX mux for switching DP AUX signals and reducing overall system BOM cost.

Features

- Built-in re-timers
 - Integrated re-timers for USB 3.1 up to Gen 2 @ 10Gbps
 - Supports both Separate Reference Clock Independent SSC (SRIS) and Bit-Level Re-timer (BLR) Architectures of USB3.1 Specification (Appendix-E)
 - Integrated re-timers (Link training-tunable PHY repeater) for DisplayPort up to HBR3 @ 8.1Gbps. Supports both transparent mode and non-transparent mode (transparent or LTTPR).
 - Loss compensation to recover up to 23dB channel loss (USB), up to 27dB (DP)
- Integrated mux
 - Integrated (6x4) mux switches USB and DP signals and preserves enhanced signal output over USB-C connector
 - Mux control input through I2C commands from external I2C master (or, optionally through FLIP/OP_MODE pins)
 - Integrated SBU/AUX mux for switching DisplayPort AUX +/- signals
- Reference clock for re-timers
 - Utilizes a 24MHz crystal or 1.05V swing single-ended clock source
- Serial and debug interfaces
 - I²C Slave interface, up to 1MHz, for mux and re-timer configuration
 - DCI debug interface support
- Industry standard compatibility
 - USB 3.1 specification, Appendix E
 - DisplayPort 1.4 specification
 - USB Type-C r1.2 specification
 - Intel USB 3.1 Repeater and Active Switch specification
- Low-power design
 - Analog power supply at 1.8V
 - Dedicated 3.3V power for PULL_1 and PULL_2, DCI interface
 - Dedicated supply power pin for I/O power at 1.8V
- Packages
 - BGA-56, 4.0mm x 4.5mm, 0.8mm Z-height, 0.5mm ball-pitch
 - QFN-60, 7.0mm x 7.0mm, 0.90mm Z-height, 0.4mm pin-pitch
- Commercial temperature range of 0C to 70C

Applications

Notebooks, desktops, and 2-in-1s



Related Products

Part Number	Description
ANX7401	USB-PD and Channel Configuration Controller
ANX7408	USB3 Switch, USB-PD and Channel Configuration Controller
ANX7428	DP Alternate Mode (up to 4L), USB3 Switch, USB-PD and Channel Configuration Controller
ANX7430	USB 3.1 Gen2 10G Re-timer (1x1, 1x2)
ANX7490	10G USB 3.1 Re-timer (1-Port)
ANX7496	8.1G DisplayPort 4-lanes Re-timer

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