

Description

M88RT61632 is the 3rd generation retimer of Montage Technology. It is designed to optimize connectivity performance for high-bandwidth applications such as AI and cloud computing.

The device leverages Montage's proprietary PAM4 SerDes IP to deliver outstanding signal integrity, with a link budget of 36 dB at a maximum data rate of 64 GT/s (double that of PCIe 5.0). Its innovative DSP architecture can effectively address PCIe 6.x system design challenges, including crosstalk and signal reflection. In addition, the chip features advanced link training and enhanced telemetry, enabling comprehensive link monitoring and fault diagnoses for highly reliable AI cluster deployments.

The chip is compliant with PCIe 6.x and CXL 3.x specifications, and adopts industry-standard packaging, demonstrating smooth interoperability with CPUs, test equipment, and end devices.

Features

- Standards and Compatibility
 - Compliant with PCIe 6.x Base Spec and CXL 3.x Spec.
 - Compliant with Intel PCIe 6.0 Retimer Supplemental Features and Standard BGA Footprint Spec
- High-Speed I/O Characteristics
 - Compensate for channel loss of 36dB (die-to-die) at PCIe Gen6 PAM4 64GT/s
 - Per-lane SerDes configuration (de-emphasis, Rx EQ)
 - Support MPS (Multiple Preset Subset) for enhanced link training

- Clocking
 - PCIe 6.x standard 100MHz reference clock input
 - Support Common mode, SRNS and SRIS
 - HCSL reference clock output to downstream devices
- Flexible link bifurcation from 1 x16, 2 x8, 4 x4, and up to 8 x2 lanes per link
- All lanes can operate at 64 GT/s, 32 GT/s, 16 GT/s, 8 GT/s, 5 GT/s and 2.5 GT/s data rates
- Low power and low latency
- Support secure boot and secure firmware upgrade
- Support IEEE 1149.6 AC-JTAG boundary scan
- Management interface with SMBus/I3C protocol support
- Firmware load through SPI Flash or EEPROM
- Embedded MCU for flexible debugging

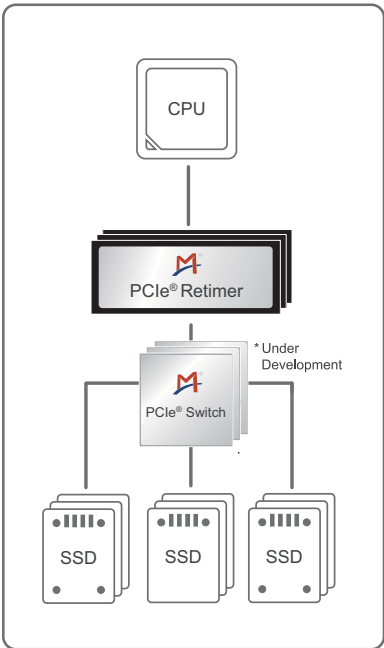
Service Support

- Evaluation Board (EVB) and Debugging/Diagnosis/Simulation tool kit
- SDK software and user-friendly visual GUI tools
- SerDes IBIS-AMI kit and package S-parameters

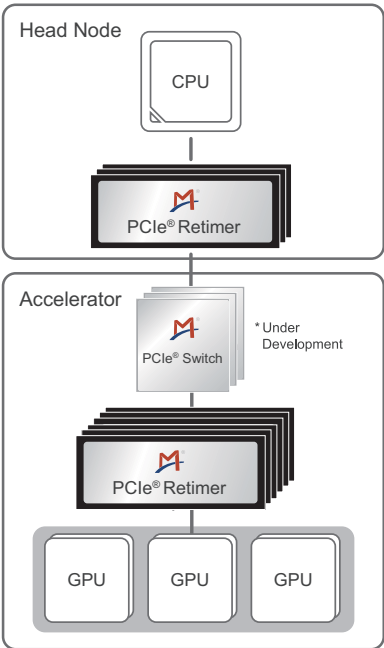
Applications

- GPU/AI accelerator and Kit
- PCIe Riser and AIC card connectivity for disaggregated compute, network, memory and storage
- General-purpose server CPU connectivity for network, storage (SSD), accelerator, CXL memory, etc.
- PCIe SSD storage box appliances

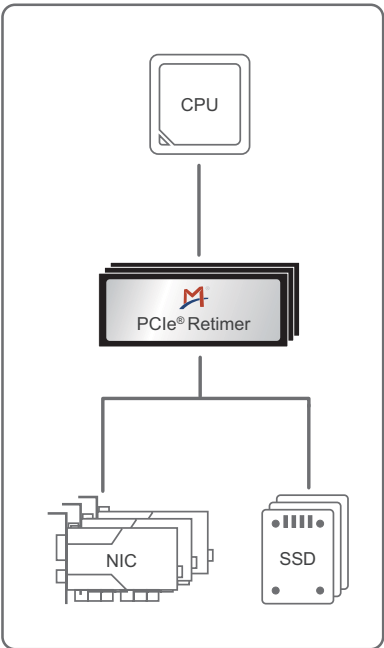
Application Examples



Storage Server



AI Server



General-purpose Server