

Valens VS6320 Chipset

The first ASIC-based USB 3.2 high performance extension solution

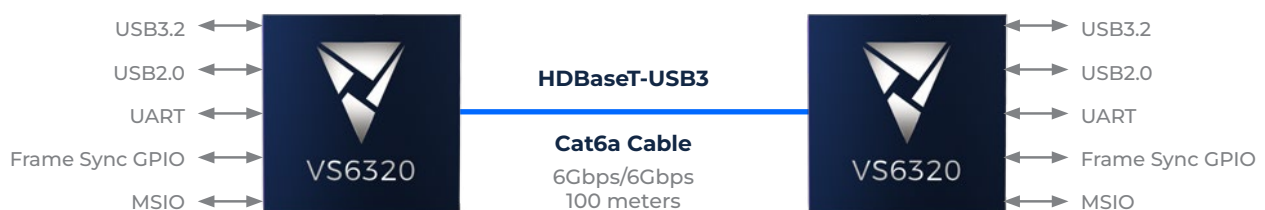
Overview

With the proliferation of USB peripherals supporting high bandwidth applications such as high-resolution cameras, recording devices, and more, there is a growing need for a professional-grade, high-performance USB 3.2 extension solution.

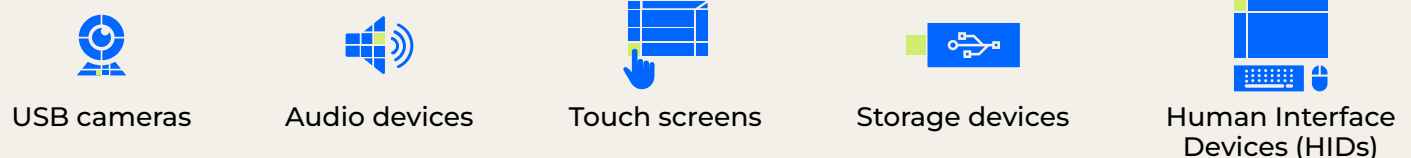
The Valens VS6320 chipset, compliant with HDBaseT-USB3, extends SuperSpeed USB 3.2 Gen 1 (5Gbps), Hi-Speed USB 2.0 (480Mbps), and Control signals over a standard Cat 6A cable for distances of up to 100 meters (328 feet). The chipset supports all USB transfer types: Control, Bulk, Interrupt, and Isochronous.

Features

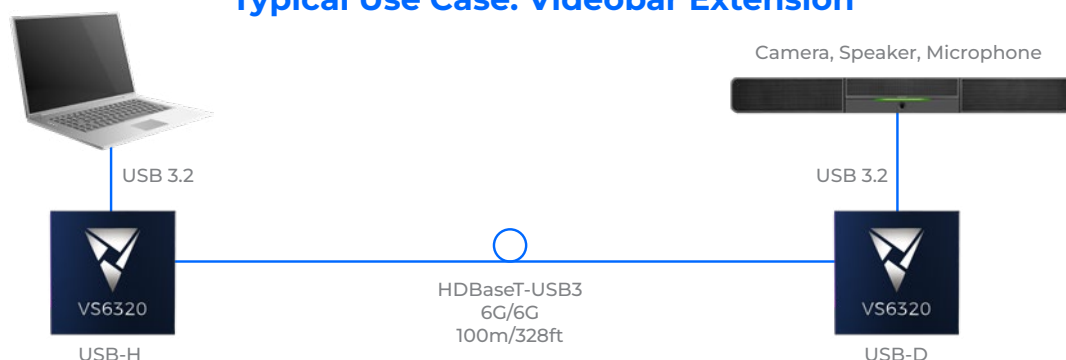
- **Reliable** - Using proven high-performance HDBaseT technology for high-bandwidth extension.
- **Zero latency** - Meeting the requirements of the time-sensitive USB protocol.
- **Distance** - Up to 100m/328ft.
- **Convergence** - Additional interfaces extended over the link, including MSIO, Frame Sync, and UART.
- **Advanced Frame Sync** - Enabling synchronization of multi-camera systems.
- **PoH/PoE/PoE+** - Providing freedom to install devices in locations without AC outlets.
- **Field Terminated** - For professional, streamlined installations.



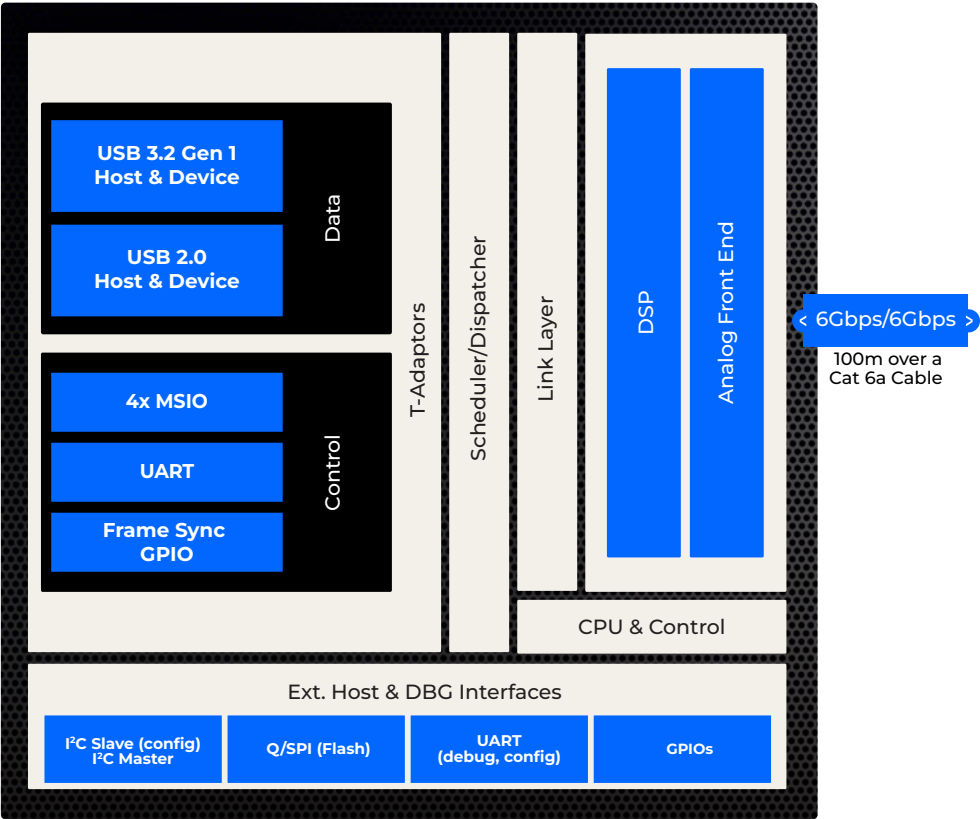
Applications



Typical Use Case: Videobar Extension



Block Diagram



Technical Highlights

Link	
Maximum data rate	6Gbps/6Gbps
Distance	100 meters (328 feet)
Cable	Cat 6a
Converged interfaces	
USB3.2 Gen 1	SuperSpeed 5Gbps/5Gbps All transfer types: Control, Bulk, Interrupt, and Isochronous
USB 2.0	Hi-Speed 480Mbps/480Mbps All transfer types: Control, Bulk, Interrupt, and Isochronous
MSIO	4 I/Os Sample rates: 0.5 MHz, 1.0 MHz or 1.5 MHz
Frame Sync GPIO	Latency < 15µs Jitter < 1µs Up to 20 KHz frame rates. Typical rates are in the range between 25 Hz and 500 Hz.
UART	Baud rates: 19200, 38400, 57600, 115200, 230400, 460800, 921600
Other	
System Interfaces	UART, I²C, SPI/QSPI, GPOs/GPIOs
Junction Temperature	-40°C to +125°C
Power Dissipation	2W (typical)
Packaging	FCCSP 13 mm x 13 mm 225-ball grid (15 x 15) Ball pitch 0.8 mm