

VS6320 Product Brief

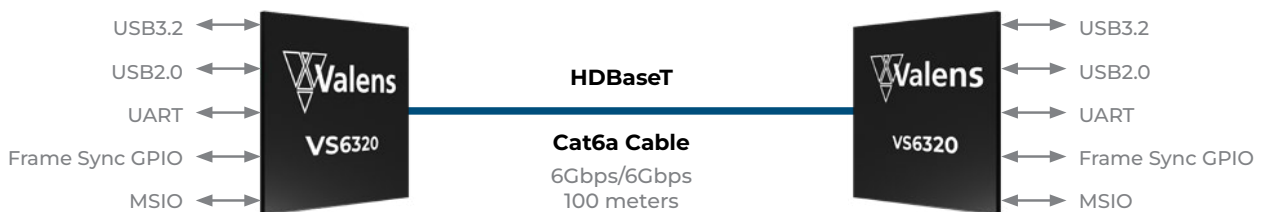
The first ASIC-based USB 3.2 high performance extension solution

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 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.

- **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



USB cameras



Audio devices



Touch screens



Storage devices

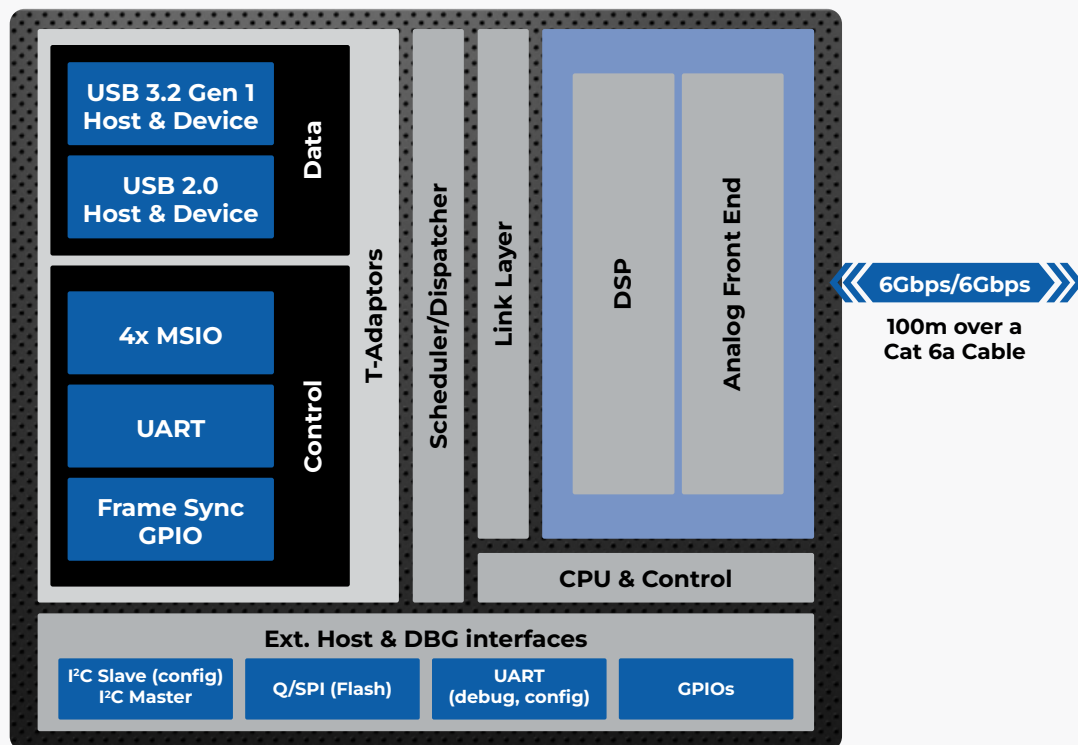


Human Interface Devices (HIDs)

Typical Use Case: Videobar Extension



VA6320 Functional 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, I ² C, 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 |