



VIA VL811 - SuperSpeed USB 3.0 Hub Controller

The VIA VL811 4-port USB 3.0 hub controller from VIA Labs is a second-generation fully integrated single chip solution that supports the higher transfer rates of the new USB 3.0 specification, allowing maximum data transfer rates of up to 5Gbps, or ten times the throughput available to USB 2.0 based devices.

The VIA Labs VL811 hub controller adds a feature called "Charging Downstream Port," CDP, as defined in the USB Battery Charging Specification. When a BCS-compatible device is attached, the device can charge over 3x faster than conventional hubs or hosts. CDP allows users to transfer data while simultaneously charging their device at the same rate as when charging from an AC adapter.

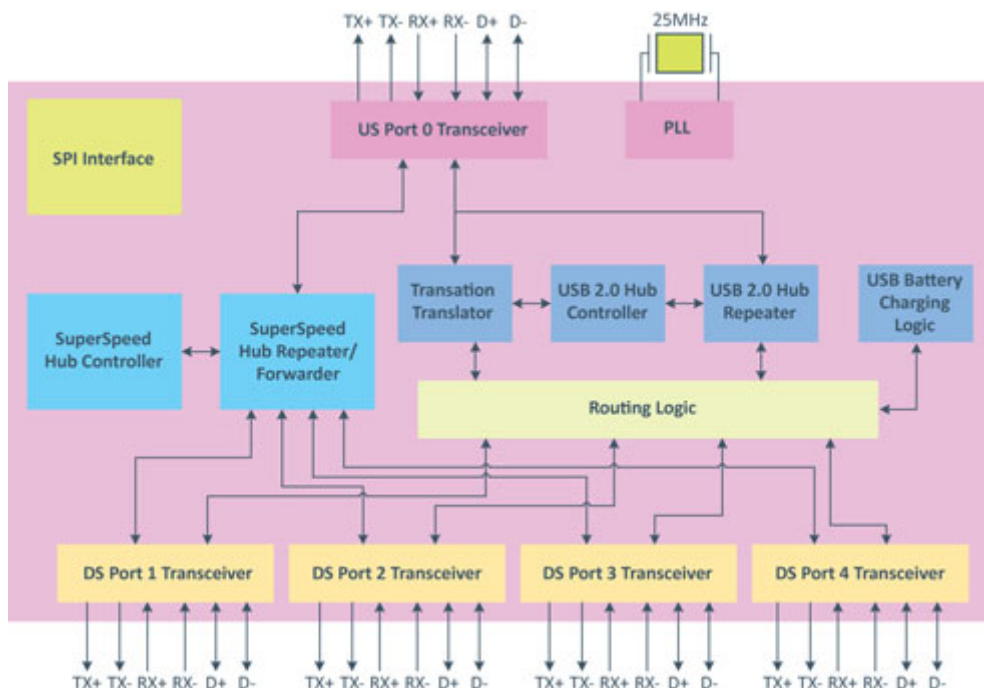
The VIA VL811 enables four USB devices to be connected to a single downstream port on the host computer or another hub. Employing an advanced CMOS process, its integrated in-house USB PHY enables One upstream port and four downstream ports support not just SuperSpeed transfer, but are also backwards compatible with previous USB specifications and offer support for Hi-Speed (480Mbps), Full-Speed (12Mbps), and Low-Speed (1.5Mbps) traffic.

Employing a well planned pin-out and advanced manufacturing process, devices based on the VIA VL811 can enjoy easy layout and a low working temperature in the most compact device housing. Full sideband signal pins are available for showing power enable, over current, and LED status control. The SPI interface can support external EEPROMFlash for firmware upgrades or additional software enhancements. The VIA VL811 is available in a QFN 88L green package (10x10x0.85 mm) to fit small form-factor designs.

VIA VL811-based hub devices enjoy full and comprehensive driver support on all modern operating systems including Windows 7. Employing adoptive equalization, the chip also offers improved signal integrity over a variety of topologies and channel conditions, and makes the VL811 well suited for stand alone USB hubs, desktop PC front panel hubs, on-board hubs, docking systems, and USB hub compound devices including mouse, keyboard, display and printer USB devices.



Block Diagram



Key Features

- Compliant to USB 3.0 specification revision 1.0, and USB specification revision 2.0
- Fully integrated single chip implementation
- One up-stream supports Super-speed, high-speed and full-speed traffic
- Four down-stream ports support Super-speed, high-speed, full-speed and low-speed traffic
- "Charging Downstream Port", CDP, feature for rapid-charging
- In-house USB PHY employs advanced CMOS process for low power consumption
- Supports USB 3.0 low power states
- Supports full sideband signal functions inc. gang mode and LED status lights
- Full software support for Windows 7, Vista, XP, 2003, 2000, ME and Mac OS 10X and various Linux kernels