

Low Speed/Full Speed/High Speed USB 2.0 High Speed Hub Controller USB 2.0 3.3V T/R  
36-Pin VQFN EP

Manufacturers	<a href="#">Microchip Technology, Inc</a>
Package/Case	VQFN-36
Product Type	Interface ICs
RoHS	Rohs
Lifecycle	



Images are for reference only

Please submit RFQ for USB2512B-AEZG-TR or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

Microchip's USB251xB is a family of versatile, cost-effective, and power-efficient USB 2.0 hub controllers. Leveraging Microchip's innovative MultiTRAK™ technology that delivers industry-leading data throughput in mixed-speed USB environments, the USB251xB family is a USB port expansion solution for applications that demand ultra low power and a small footprint without compromising on performance.

Well-suited for consumer and mobile applications, all members of the USB251xB family are available in a space-saving package. The common 36-pin package shared among the 2/3/4 port hub controllers measures only 6x6 mm and provides an ultra small footprint for space-constrained designs while allowing scalable port expansion from two to four ports.

Over 30 programmable features including Microchip's unique PortMap, PortSwap, and PHYBoost are designed to aid system designers in simplifying PCB layout and optimizing bill-of-material cost. Every downstream port of the USB251xB hubs can be enabled to support USB Battery Charging 1.1 specification as a Charging Downstream Port (CDP). A CDP provides universal battery charging capability to a compliant mobile phone or portable electronic device using a standard USB port.

The USB251xB supports an extended operating temperature range of 0° to 85°C. The USB251xBi is designed to meet -40° to 85°C industrial temperature requirements. Note that the "M2" product versions are targeted for new designs. The M2 products are manufactured on the latest production flow offering improved efficiencies and capacity. No product versions of the USB251xB are near the end of life, with all versions maintaining full production release status.

\*The USBCheck online design review service is subject to Microchip's Program Terms and Conditions and requires a myMicrochip account.

## Features

### Highlights

High performance, ultra low-power, small footprint hub controller IC with 2, 3, or 4 downstream ports (indicated by the "x" in the part number)

Fully compliant with the USB 2.0 specification

Enhanced OEM configuration options available through either a single serial I2C® EEPROM, or SMBus slave port

MultiTRAK - High-performance multiple transaction translator which provides one transaction translator per port

PortMap - Flexible port mapping and disable sequencing

PortSwap - Programmable USB differential-pair pin locations ease PCB design by aligning USB signal lines directly to connectors

PHYBoost - Programmable USB signal drive strength for recovering signal integrity using 4-level driving strength resolution

#### Features

USB251xB/xBi products are fully footprint compatible with USB251x/xi/xA/xAi products as direct drop-in replacements

Cost savings include using the same PCB components and application of USB-IF Compliance by Similarity

Full power management with individual or ganged power control of each downstream port

Fully integrated USB termination and pull-up/pulldown resistors

Supports a single external 3.3 V supply source; internal regulators provide 1.2 V internal core voltage

Onboard 24 MHz crystal driver, ceramic resonator, or external 24/48 MHz clock input

Customizable vendor ID, product ID, and device ID

4 kilovolts of HBM JESD22-A114F ESD protection (powered and unpowered)

Supports self- or bus-powered operation

Support the USB Battery Charging specification Rev. 1.1 for Charging Downstream Ports (CDP)

36-pin QFN (6x6 mm) RoHS compliant package

USB251xBi products support the industrial temperature range of -40°C to +85°C

USB251xB products support the extended commercial temperature range of 0°C to +85°C

#### Target Applications

Mobile PC Docking Stations

LCD Monitors/TVs

PC Motherboards

Gaming Consoles

Multi-Function Printers

Cable/DSL Modems

Set-Top Boxes

DVD/CD-ROM/DVR

HDD Enclosures

Keyboards

KVM Switches

Server Front Panels

Point-of-Sale (POS) Systems

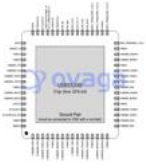
IP Telephony

Automobile/Home Audio Systems

Industrial



## Related Products



### [USB5534B-5000JZX](#)

Microchip Technology, Inc  
QFN-64



### [USB3250-ABZJ](#)

Microchip Technology, Inc  
VQFN-56



### [USB2514B-AEZG](#)

Microchip Technology, Inc  
VQFN-36



### [USB2513B-AEZC](#)

Microchip Technology, Inc  
VQFN-36



### [USB2512-AEZG](#)

Microchip Technology, Inc  
VQFN-36



### [USB2504A-JT](#)

Microchip Technology, Inc  
LQFP-64



### [USB2514-HZH](#)

Microchip Technology, Inc  
VQFN-48



### [USB5906-I/KD](#)

Microchip Technology, Inc  
VQFN-100