

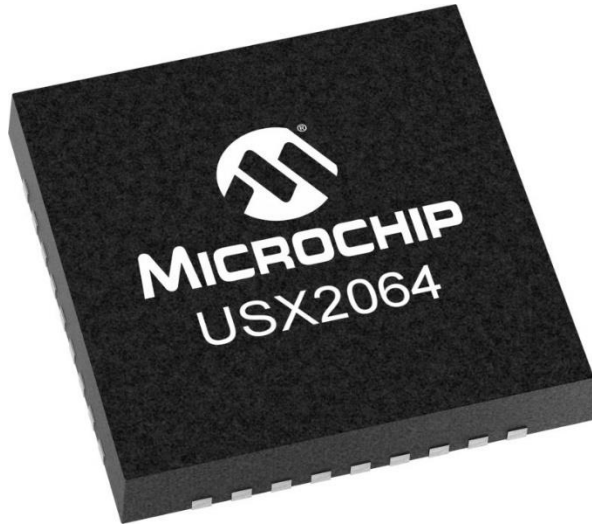


# USX2064

**Status:** In Production.

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Microchip's USX2064 is part of 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 USX2064 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 USX2064 is 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 USX2064 hub 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 [USBCheck online design review](#) service is subject to Microchip's [Program Terms and Conditions](#) and requires a myMicrochip account.

# Product Features

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- Highlights
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  - High performance, ultra low-power, small footprint hub controller IC with 4 downstream portsFully compliant with the USB 2.0 specificationEnhanced OEM configuration options available through either a single serial I2C® EEPROM, or SMBus slave portMultiTRAK - High-performance multiple transaction translator which provides one transaction translator per portPortMap - Flexible port mapping and disable sequencingPortSwap - Programmable USB differential-pair pin locations ease PCB design by aligning USB signal lines directly to connectorsPHYBoost - Programmable USB signal drive strength for recovering signal integrity using 4-level driving strength resolutionCost savings include using the same PCB components and application of USB-IF Compliance by SimilarityFull power management with individual or ganged power control of each downstream portFully integrated USB termination and pull-up/pulldown resistorsSupports a single external 3.3 V supply source; internal regulators provide 1.2 V internal core voltageOnboard 24 MHz crystal driver, ceramic resonator, or external 24/48 MHz clock inputCustomizable vendor ID, product ID, and device ID4 kilovolts of HBM JESD22-A114F ESD protection (powered and unpowered)Supports self- or bus-powered operationSupport the USB Battery Charging specification Rev. 1.1 for Charging Downstream Ports (CDP)36-pin QFN (6x6 mm) RoHS compliant packageMobile PC Docking StationsLCD Monitors/TVsPC MotherboardsGaming ConsolesMulti-Function PrintersCable/DSL ModemsSet-Top BoxesDVD/CD-ROM/DVRHDD EnclosuresKeyboardsKVM SwitchesServer Front PanelsPoint-of-Sale (POS) SystemsIP TelephonyAutomobile/Home Audio SystemsIndustrial
  - High performance, ultra low-power, small footprint hub controller IC with 4 downstream ports
  - 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
- 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
- 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

## Parametrics

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Click on a property to perform a parametric search for other products with that property.

<b>Upstream Port</b>	<b>USB 2.0</b>
<b>USB Speed</b>	<b>USB 2.0</b>
<b>Downstream Ports</b>	<b>4</b>
<b>SmartHub</b>	<b>No</b>
<b>MGMT I/F</b>	<b>I2C</b>
<b>ROM I/F</b>	<b>No</b>
<b>Op Voltage (V)</b>	<b>3.3</b>
<b>MultiTRAK Tech</b>	<b>Yes</b>
<b>Integrated Flash Media Reader</b>	<b>No</b>
<b>PortMap</b>	<b>Yes</b>

<b>PortSwap</b>	<b>Yes</b>
<b>PHYBoost</b>	<b>Yes</b>
<b>Temp. Range Min.</b>	<b>0</b>
<b>Temp. Range Max.</b>	<b>70</b>

## Documentation

Title	Document Category	DS Number	Download	Link	Favorites
USB251xB/USB251xBi USB 2.0 Hi-Speed Hub Controller Data Sheet	Data Sheets	1692	Download		☆
USB251xB/xBi Family Silicon Errata	Errata	80000627	Download		☆
AN26.2 - Implementation Guidelines for Microchip's USB 2.0 and USB 3.1 Gen 1 and Gen 2 Hub and Hub-Combo Devices	Application Notes		Download	Link	☆
AN20.20 - Conversion from USB251x to USB251xB	Application Notes		Download	Link	☆
AN15.17 - PCB Layout Guide for USB 2.0 Hubs	Application Notes		Download	Link	☆
AN26.21 - USB Device Design Checklist	Application Notes		Download	Link	☆
USB2514B Schematic Checklist	Supporting Collateral		Download		☆

To see a complete listing of RoHS data for this device, please [Click here](#)

Shipping Weight = Device Weight + Packing Material weight. Please contact sales office if device weight is not available.

<https://www.microchip.com/en-us/product/USX2064/9-13-22>