High-speed hub bridge

Overview

The FT4232H USB serial/hub module extends the number of interfaces that can be accessed downstream from a USB Host.

Key Takeaways

A high-speed hub bridge is a device that combines hub and bridge functionality to expand connectivity and enable fast data transfer between different interfaces, such as USB, Ethernet, or serial buses.

Overview

A high-speed hub bridge serves two main purposes: it acts as a hub, allowing multiple downstream devices to connect to a single host, and as a bridge, enabling communication between different types of interfaces or protocols. These devices are commonly used in USB, Ethernet, and serial communication systems to increase connectivity while maintaining high data transfer rates. Key FeaturesHigh-Speed Data Transfer: Many hub bridges support USB 2.

0 Hi-Speed (up to 480 Mb/s) or high-speed UARTs with baud rates up to 5 Mibit/s. Multiple Downstream Ports: Devices like the FT4232H provide access to multiple USB ports, allowing several peripherals to connect simultaneously. Interface Bridging: They can convert between different protocols, such as USB-to-Ethernet, USB-to-I²C, or UART-to-USB, enabling devices with incompatible interfaces to communicate.

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Integrated Control and Diagnostics: Many hub bridges include LEDs for port activity, configurable hub controllers, and error-handling features to monitor and manage connected devices. Flexible Power Options: Some devices can be powered via USB or an external supply to support multiple downstream devices. ApplicationsUSB Expansion: High-speed hub bridges allow PCs or embedded systems to connect to multiple USB peripherals while maintaining fast data rates.

Networking: USB-to-Ethernet bridges provide high-speed network connectivity for devices without native Ethernet ports, often supporting precision timing for synchronization. Embedded Systems: High-speed UART and bridge ICs enable communication between microcontrollers and multiple serial devices, reducing processor overhead and improving system performance. Media and Storage: Some hub bridges integrate flash media readers, allowing simultaneous access to storage devices and USB peripherals.

ExamplesFT4232H Module: A USB 2. 0 Hi-Speed hub and serial interface module with multiple downstream ports and configurable hub functions. USB2642: A USB 2.

0 hi-speed hub combined with a flash media reader and I²C/SD bridges for embedded applications.

NXP High-

Speed UAR

T Bridges: Provide multi-channel UART connectivity with high baud rates and low-latency bridging for embedded systems. High-speed hub bridges are essential in modern computing and embedded systems where multiple devices need to communicate efficiently across different interfaces while maintaining high data throughput.

Article Content

Hubs, Bridges and Switches | NetworkAcademy.IO

In the 1990s, networks continued to grow, and the required speeds continued to increase. People needed to connect tens of devices in a local network and

Ethernet Bridges | Microchip Technology

Ethernet NIC/bridge devices enable you to implement Ethernet connectivity to a host processor via USB, High-Speed Inter-Chip (HSIC), Peripheral Component

FT-MOD-4232HUB

The FT4232H USB serial/hub module extends the number of interfaces that can be accessed downstream from a USB Host. The module has an FTDI FT4232H

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USB Brochure

Microchip''s versatile, cost-effective and power-efficient USB hubs, bridges, switches, transceivers and power delivery controllers deliver industry-leading data throughput in USB environments.

Bridge Pro

The next generation of the Hue smart hub. Powered by a chip that''s capable of running complex algorithms and AI-powered features, it''s faster and stronger

Network Devices

It is a networking device combining bridge and router functions, operating at both the Data Link and Network layers of the OSI model. It can route known protocols (like TCP/IP).

XR2280x Hi-Speed USB to 10/100 Ethernet Bridge ICs

MaxLinear Hi-Speed USB to 10/100 Ethernet Bridge is a Hi-Speed USB 2.0 compound device with an embedded hub and 3 downstream USB functions: 10/100 Ethernet MAC and PHY,

FTDI Chip High-Speed USB Bridge ICs with Type-C Controllers

The high-speed USB bridges offer up to 40Mbytes/s data rates and multi-channel interfacing. The benefit of a multi-channel bridge is that the system BOM is reduced by removing the

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The Difference Between Hub, Bridge and Switch

Although the basic functionality of a switch is similar to that of a bridge, switches work at much higher speeds and have more functionality as compared to bridges. They will have higher port densities;

Hubs, Bridges and Switches | NetworkAcademy.IO

Learn how Layer 2 network devices evolved from hubs to modern switches, and how they manage traffic, reduce collisions, and scale in enterprise networks.

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NVLink High-Speed GPU Interconnect | NVIDIA Quadro

NVIDIA ® NVLink ™ is the world''s first high-speed GPU interconnect offering a significantly faster alternative for multi-GPU systems than traditional PCIe-based solutions. Connecting two NVIDIA ®

SmartHub ICs

A SmartHub IC is a USB hub that integrates system-level functions typically associated with a separate microcontroller (MCU) or processor. It provides an extra port to handle host communication outside

Network switch

Network switch Avaya ERS 2550T-PWR, a 50-port Ethernet switch A network switch (also called switching hub, bridging hub, Ethernet switch, and—by the IEEE — MAC bridge) is networking

What''s the Difference Between Hubs, Switches & Bridges?

The key difference between hubs, switches and bridges is that hubs operate at Layer 1 of the OSI model, while bridges and switches work with MAC addresses at Layer 2 of the OSI model.

High-speed, High-density, and Highly-manufacturable Cu-filled Through ...

A previously presented topside Cu-filled through-glass-via channel (a “Cu bridge”) is expected to be better able to support high-speed high-density signal processing in multi-chiplet

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China has once again broken the record for the highest bridge on earth. Located in the southern province of Guizhou, the Huajiang Grand Canyon

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