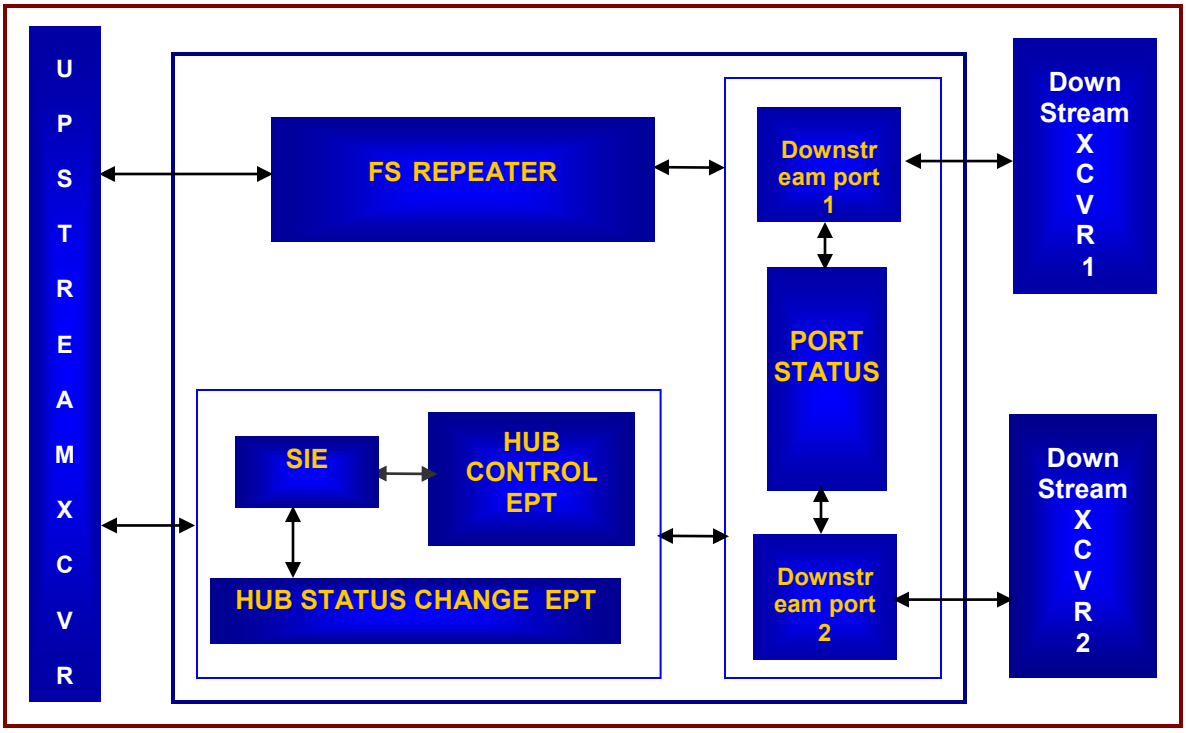
# USB 1.1 Hub Core

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## Overview

VinChip's USB 1.1 Hub core is designed for flexibility and ease of use and is technology independent. More information can be had from www.vinchip.com

## Key Features

- USB 1.1 Compliant
- Parametrizable downstream ports
- All hub specific requests supported
- Easy to use VinAuto-configure utility for wiring of downstream ports.
- VinAutogen utility for generation of descriptors.
- Supports suspend/resume for power management.

- Downstream device connect / disconnect detection.
- USB1.1 Transceiver compatible upstream and downstream port pins.
- Provision of port indicators for the downstream ports.

## Description

The USB 1.1 Hub core consists of Hub Controller and Repeater. The Hub Controller provides the mechanism for host to hub communication. Hub-specific status and control commands permit the host to configure a hub and to monitor and control the individual downstream ports.

**Hub Controller Block**
This block contains a transceiver interface block to compose / decipher the packet fields and a command interpreter block. The command interpreter block decodes both the USB standard commands as well as the HUB class specific commands and provides the necessary Hub/Port status information to the host.

**Hub Repeater Block**
The hub repeater block handles the connectivity between the root port or a hub port and downstream ports and operates in the full speed mode in the upstream and full or low speed mode in the downstream, depending on the USB1.1 devices connected to the downstream ports.

**Upstream / Downstream transceiver**
Philips transceiver (ISP 1501BE) is used in our USB1.1 Hub design on both the upstream port and in the two downstream ports.

**Port State Machine Block**

This block detects the connect / disconnect events in the port and has the capability to enable / disable or suspend / resume of the port. This also reports the port status and change information to the Hub Controller block and also determines whether the device attached is full speed.

**Core Configurability**
Auto-configure and Auto-wire are pre-compiled C language-based utilities. These utilities allow users to customize and configure the hub core in an error-free way. They offer the user a choice of the number of downstream ports along with the desired descriptor contents.

## Products & Services

VinChip's suite of soft cores for SoCs includes USB, PCI, Bluetooth and Infiniband controllers. These soft cores come with comprehensive documentation, verification environment, test suite, Drivers and tech support. Please contact us at info@vinchip.com or at (408) 777 2922 for more information on our products and services.