


## Full Speed Hub Controller USB 2.0 3.3V T/R 32-Pin LQFP

<b>Manufacturer:</b>	<a href="#">Texas Instruments, Inc</a>
<b>Package/Case:</b>	QFP
<b>Product Type:</b>	Interface ICs
<b>RoHS:</b>	RoHS Compliant/Lead free 
<b>Lifecycle:</b>	Active



Images are for reference only

[Inquiry](#)

### General Description

The TUSB2036 hub is a 3.3-V CMOS device that provides up to three downstream ports in compliance with the USB 2.0 specification. Because this device is implemented with a digital state machine instead of a microcontroller, no firmware programming is required. Fully-compliant USB transceivers are integrated into the ASIC for all upstream and downstream ports. The downstream ports support both full-speed and low-speed devices by automatically setting the slew rate according to the speed of the device attached to the ports. The configuration of the BUSPWR pin selects either the bus-powered or the self-powered mode. The introduction of the DP0 pullup resistor disable pin, DP0PUR, makes it much easier to implement an onboard bus/self-power dynamic-switching circuitry. With the new function pin, the end-equipment vendor can reduce the total board cost while adding additional product value.

The EXTMEM (pin 26) enables or disables the optional EEPROM interface. When EXTMEM is high, the vendor and product IDs (VID and PID) use defaults, such that the message displayed during enumeration is General Purpose USB Hub.

The TUSB2036 supports both bus-powered and self-powered modes. External power-management devices, such as the TPS2044, are required to control the 5-V power source switching (on/off) to the downstream ports and to detect an overcurrent condition from the downstream ports individually or ganged.

An individually port power controlled hub switches power on or off to each downstream port as requested by the USB host. Also when an individually port power controlled hub senses an over-current event, only power to the affected downstream port will be switched off. A ganged hub switches on power to all its downstream ports when power is required to be on for any port. The power to the downstream ports is not switched off unless all ports are in a state that allows power to be removed. Also when a ganged hub senses an over-current event, power to all downstream ports will be switched off.

The logic level of the MODE pin controls the selection of a crystal input to drive an internal oscillator or an external clock source.

## Key Features

Fully Compliant With the USB Specification as a Full-Speed Hub: TID#30220242

Integrated USB Transceivers

3.3-V Low-Power ASIC Logic

One Upstream Port and 2 or 3 Programmable Downstream Ports

Total Number of Ports (2 or 3) Selected by Input Pin

Total Number of Permanently Connected Ports Is Selected by 2 Input Pins

Two Power Source Modes

Self-Powered Mode

Bus-Powered Mode

All Downstream Ports Support Full-Speed and Low-Speed Operations

Power Switching and Overcurrent Reporting Is Provided Ganged or Per Port

Supports Suspend and Resume Operations

Suspend Status Pin Available for External Logic Power Down

Supports Custom Vendor ID and Product ID With External Serial EEPROM

3-State EEPROM Interface Allows EEPROM Sharing

Push-Pull Outputs for BUSPWR and Enable Easy Implementation of Onboard Bus/Self-Power Dynamic Switching Circuitry

No Special Driver Requirements; Works Seamlessly With Any Operating System With USB Stack Support

Available in 32-Pin HLQFP Package With a 0.8-mm Pin Pitch (JEDEC ? S-PQFP-G For Low-Profile Quad Flat Pack)

All trademarks are the property of their respective owners.

## Recommended For You

---

### **TUSB2077APTR**

Texas Instruments, Inc

LQFP48

### **TUSB1002RGER**

Texas Instruments, Inc

QFN

### **TUSB1105RTZR**

Texas Instruments, Inc

WQFN-16

### **TUSB211QRWBRQ1**

Texas Instruments, Inc

X2QFN-12

### **TUSB4041IPAPRQ1**

Texas Instruments, Inc

HTQFP-64

### **TUSB1210BRHBR**

Texas Instruments, Inc

VQFN32

### **TUSB212QRWBRQ1**

Texas Instruments, Inc

X2QFN12

### **TUSB319IDRFQ1**

Texas Instruments, Inc

WSON8

### **TUSB1211A1ZRQ**

Texas Instruments, Inc

BGA

**TUSB4020BIPHP**

Texas Instruments, Inc

TQFP48

**TUSB1105RGTR**

Texas Instruments, Inc

VQFN16

**TUSB321RWBR**

Texas Instruments, Inc

X2QFN12

**TUSB8020BPHP**

Texas Instruments, Inc

TQFP48

**TUSB1002AIRGET**

Texas Instruments, Inc

VQFN-24

**TUSB3210PM**

Texas Instruments, Inc

QFP64