PI5USB30213

USB 3.1 Gen 1 (5Gbps) SuperSpeed Mux/Demux Switch with I2C Control

Product Description

The PI5USB30213 is a dual differential channel bi-directional multiplexer/de-multiplexer switch solution for USB 3.1 Gen 1 Type-C connector applications. PI5USB30213 switches between the USB controller and the new Type-C connector. It supports host mode, device mode and dual-role mode ports with automatic configuration based on the voltage levels detected on CC pin. It offers excellent signal integrity for high-speed signals at low power dissipation.

PI5USB30213 supports both pin and I²C control base on ADDR pin setting. In pin control mode, the PORT input pin determines the port setting, whether this is a host, device or dual-role port. In host mode, PI5USB30213 monitors ID pin to check connector status, it offers default current mode to power attached accessories. In device mode, PI5USB30213 monitors OUT1, OUT2 and OUT3 which report the detected host's charging profile capability to allow the system to select the most appropriate charging schemes.

Enabling I²C control mode allow high flexibility for port control and communications through registers read/write in PI5USB30213. There is also flexibility to support Default, 1.5A and 3A current modes. An interrupt signal for indicating changes with the I²C registers is sent to the master to notify the system any change in the Type-C connector while in parallel the system can still monitor ID pin.

Features

- USB Type-C™ Specification 1.1
- Dual Differential Channel, 2:1 USB 3.1 Gen 1 Mux/DeMux
- Switches USB controller and Type-C connector
- Supports Host-mode/Device-mode/Dual-role mode
- Auto-configure ports orientation through CC detection
- Supports VCONN to power active cables and other accessories
- Supports over-current protection and over-voltage protection for VCONN
- Allow both pin control and I²C interface

- Integrated power switches, high-precision resistors and current sources for CC pins
- Provides support for default current, 1.5A and 3A modes with I²C control
- Output indicator for plug-in detection
- Power saving mode
- Wide power supply range : 2.7V – 5.5V
- Temperature Range: 0°C to 85°C
- Packaging (Pb-free & Green):
    - 24- contact, TQFN(2mm x 4mm)

Application

- Notebooks
- Mobile Phones
- Tablets
- Docking Station

Product Specifications

Analog or Digital?	Analog
Configuration	
Differential Channels	
HotInsertion	No
Lanes	
OtherFeatures	NA
RailToRail	No
Signal Type	
Single Ended Channels	
Type	NA
Voltage	2.7 - 5.5