

# PI1EQX512A

1.0V, 5.0Gbps, 1-Port, USB3.0 ReDriver

## Description

The PI1EQX512A is an ultra-low-power, high performance 5.0 Gbps signal ReDriver designed specifically for the USB 3.0 protocol. The device provides programmable equalization and De-Emphasis to optimize performance over a variety of physical mediums by reducing Inter-Symbol Interference.

PI1EQX512A supports two 100Ω Differential CML data I/O's between the Protocol ASIC to a switch fabric, over cable, or to extend the signals across other distant data pathways on the user's platform.

The integrated equalization circuitry provides flexibility with signal integrity of the signal before the ReDriver. A low-level input signal detection and output squelch function is provided for each channel. Each channel operates fully independently. When EN = 1, the channels' input signal level (on XI+/-) determines whether the output is active.

The PI1EQX512A also includes an automatic receiver detect function. The receiver detection loop will be active again if the corresponding channel's signal detector is idle for longer than 7.3mS. The channel will then move to Unplug Mode if load not detected, or it will return to Low Power Mode (Slumber Mode) due to inactivity.

## Features

- USB 3.0 compatible
- Full Compliancy to USB3.0 Super Speed Standard
- Two 5.0Gbps differential signal pairs
- Adjustable Receiver Equalization
- 100Ω Differential CML I/O's
- Pin Configured Output Emphasis Control
- Input signal level detect and squelch for each channel
- Automatic Receiver Detect
- Low Power : ~70mW
- Auto "Slumber" mode for adaptive power management
- Standby Mode - Power down state
- Single Supply Voltage: 1.0V
- Packaging: 18-Pin TQFN 2 x 2 mm

## Application Diagram

