

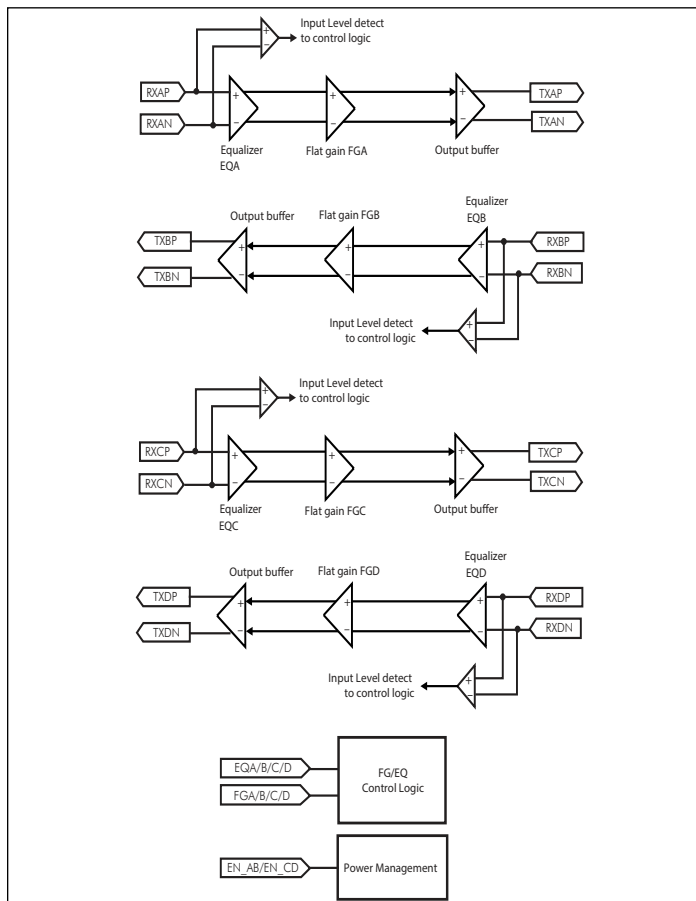
# PI3EQX1004B1

## 2-Port USB3.1 Gen-2 10Gbps ReDriver

### Features

- 5 & 10Gbps serial link with linear equalizer
- USB3.1 and USB3.0 Compatible
- Full Compliancy to USB3.1 Super Speed Standard
- Four 10Gbps differential signal pairs
- Pin Adjustable Receiver Equalization
- Pin Adjustable Flat Gain
- 100Ω Differential CML I/O's
- Automatic Receiver Detect
- Auto "Slumber" mode for adaptive power management
- Single Supply Voltage: 3.3V
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note
- Packaging:
  - 42-pin, TQFN 3.5 x 9mm (ZH42)

### Block Diagram



### Description

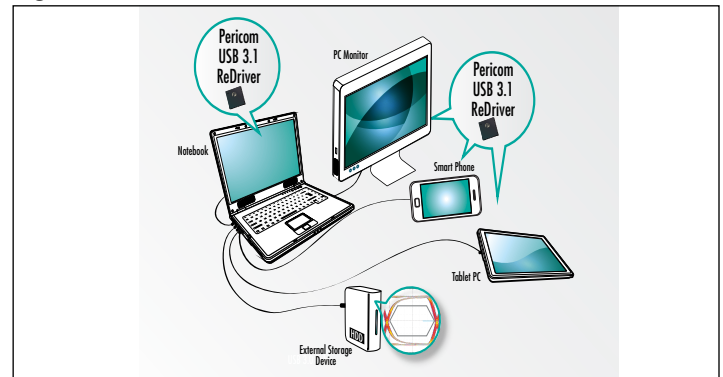
The PI3EQX1004B1 is a low power, high performance 10.0 Gbps 2-Port USB 3.1 linear ReDriver™ designed specifically for the USB 3.1 protocol.

The device provides programmable equalization, and flat gain to optimize performance over a variety of physical mediums by reducing Inter-Symbol Interference. PI3EQX1004B1 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. Each channel operates fully independently. The channels' input signal level determines whether the output is active.

The PI3EQX1004B1 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.

**Figure 1**



### Ordering Information

Part Number	Package	Description
PI3EQX1004B1ZH42	ZH	42-contact, Very Thin Quad Flat No-Lead (TQFN)

**Notes:**

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. E = Pb-free and Green
5. X suffix = Tape/Reel