

# PI3EQX1012C

## 10Gbps, USB3.1 GEN-2 Mux/DeMux ReDriver

### Features

- 5 & 10Gbps serial link with linear equalizer.
- USB3.1 Gen-2 and Gen-1 Compatible
- Full Compliancy to USB3.1 Super Speed Standard
- 1 to 2 DeMux from host Tx to device Rx
- 2 to 1 Mux from device Tx to host Rx
- Adjustable output linear swing via I2C or Pin Control
- Adjustable Flat Gain via I2C or Pin Control
- Adjustable Equalization via I2C or Pin Control
- 100Ω Differential CML I/O's
- Automatic Receiver Detect
- Auto "Slumber" mode for adaptive power management
- Temperature Range: 0°C to +85°C
- Single Supply Voltage: 3.3V ± 10%
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Packaging:
  - 42-pin, TQFN 3.5x9mm (ZH42)

### Description

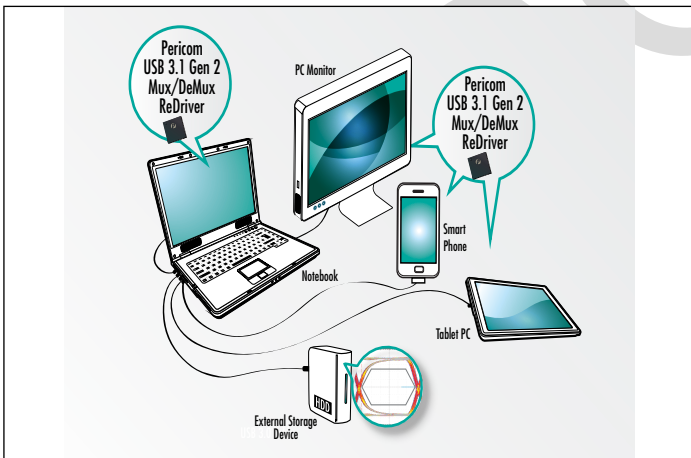
The PI3EQX1012C is a low power, high performance 10.0 Gbps USB 3.1 Gen-2 Mux/DeMux ReDriver™ designed specifically for the USB 3.1 protocol.

The device provides programmable equalization, linear swing and flat gain to optimize performance over a variety of physical mediums by reducing Inter-Symbol Interference. PI3EQX1012C 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 PI3EQX1012C 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
PI3EQX1012CZHEX	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