

PI3EQX64904

64GT/s PAM4, 4-Channels PCIe 6.0 ReDriver

Description

The PI3EQX64904 is a low-power, high-performance 64GT/s PAM4 4-channel ReDriver™.

The 4-Channel ReDriver

The ReDriver provides programmable equalization, swing linearity, and flat gain I2C Control, to optimize performance over a variety of physical mediums by reducing intersymbol interference. The ReDriver supports Four 100Ω differential CML data I/Os 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. The channels' input signal level determines whether the output is active.

The ReDriver also includes an adaptive power management feature to maximize battery life for power sensitive consumer devices.

Application(s)

- Workstations
- Servers
- PCs
- Networking

Features

- 1GT/s NRZ to 64GT/s PAM4 Linear Equalizer
- Increases High-Frequency Signal Level to Help RX DFE Achieve Low BER
- 4 Differential Channels, x2 Lane PCIe Gen 1/Gen 2/Gen 3/Gen 4/Gen 5/Gen 6 Applications
- 4 Differential Channels, x2 lane SAS4
- Per Channel Selectable Adjustment of Receiver Equalization, Zero Setting, Output Swing and Flat Gain
- Per Channel Activity Detector with Selectable Input Termination 50Ω to VCC or 200KΩ to VbiasRX
- Per Channel Output Termination Detector on Power Up with Selectable Output Termination 50Ω to VCC, 3KΩ to VbiasTX and High Impedance
- Rate and Coding Agnostic
- Transparent to Link Training, OOB and idle
- Single Ended Mode Receiver Detection for the PCIe Application
- PRSNT# Power Control for PCIe Modern Standby
- Single Power Supply of 3.3V +/-0.3V
- Pin Strap Control
- Input Threshold Detection
- 250mW Typical per Channel Power Dissipation with a 1000mVpp Output Swing at 16GHz
- Support I2C Master and Slave Mode
- Ambient Operating Temperature: -40°C to 85°C
- Packaging (Pb-free & Green):
 - 31-Contact, W-LGA6127-31 (FLA)
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/quality/product-definitions/) or your local Diodes representative.

Ordering Information

Orderable Part Number	Package Code	Package Description
PI3EQX64904FLAEX	FLA	31-Contact, W-LGA6127-31

Notes:

- E = Pb-free and Green
- X suffix = Tape/Reel

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.