A Product Line of
Diodes Incorporated

PI2DPX2063A

1.8V 20Gbps DP 2.1 Linear ReDriver with AUX Listener & I2C Control

Description

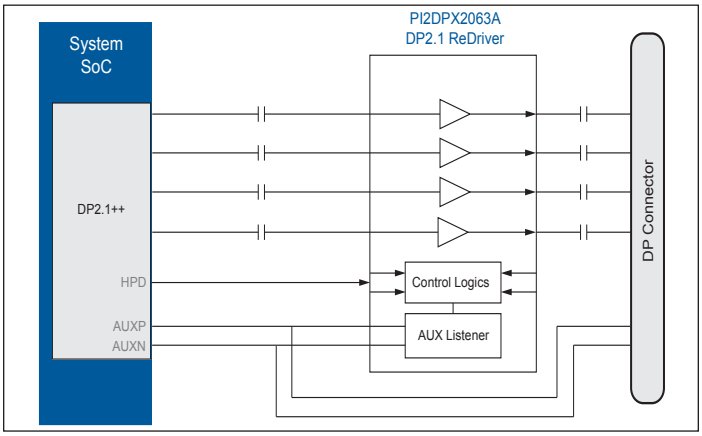
The DIODES PI2DPX2063A is a 20Gbps DP2.1/DP1.4 linear ReDriver™ in a 4-to-4 configuration operated by a 1.8V power supply. The device supports UHBR20 (DP2.1 20Gbps), UHBR13.5 (DP2.1 13.5Gbps), UHBR10 (DP2.1 10Gbps), HBR3 (DP1.4 8.1Gbps), HBR2 (DP1.2 5.4Gbps), HBR (DP1.1 2.7Gbps) and RBR (DP1.0 1.62Gbps) under various DisplayPort speeds. With the on-chip AUX channel listener, the device can automatically monitor the system operation status to enter D3 power saving mode.

The non-blocking linear ReDriver design ensures that the differential signals conveying pre-shoot and de-emphasis equalization waveforms from the transmitter side to the receiver side help optimize the overall channel link adjustment conducted by the system transmitter and receiver that has been equipped with DFE. The CTLE equalizers are implemented at the inputs of the ReDriver to compensate the channel loss and reduce the ISI jitters. The programmable flat gain adjustments support the eye diagram opening.

The CTLE EQ gains and flat gains are individually programmable on each channel for flexible tuning via I2C register settings.

Application(s)

- Laptops, Desktops and AIO PCs
- Workstations and Servers
- Docking Stations
- Display Monitors
- Gaming Consoles
- Active Cables



PI2DPX2063A in DP2.1 PC Motherboard Application

Features

- 4-to-4 Linear ReDriver Channel Configuration with CTLE Gain Compensation Up to 13.4dB @20Gbps
- Supports 4-Lane DP2.1 (UHBR20/UHBR13.5/UHBR10)/HDBR3/HBR2/RBR
- Ultra Low Latency (<300ps) for Better Interoperability and Data Throughput
- Individual Controls on CTLE Gain (2.4 to 13.0dB), Flat Gain (-4 to +2dB)
- Integrated AUX Channel Listener for D3 Power Saving Mode
- I2C Slave Support with Speed Up to 1MHz
- Low Active Current Consumption
  - 4-lane DP: 160mA (typical)
- Support DisplayPort Dual Mode
- Single Power Supply: 1.8V +/-5%
- Industrial Temperature Support: -40°C to +85°C
- 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 or your local Diodes representative.
  https://www.diodes.com/quality/product-definitions/
- Packaging (Pb-free & Green):
  - Tiny 32-pin, WLGA, 2.85 x 4.5 mm (0.4 mm pitch) (FLA)

Ordering Information

Ordering Number	Package Code	Description
PI2DPX2063AFLAEX	FLA	32-Pin, W-LGA4528-32

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.

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