

# PI3DPX1205A

## DP-Alt DP1.4/USB3.1 10Gbps Type-C Linear ReDriver Mux with Latency-free and built-in Aux/SBU Mux

### Description

PI3DPX1205A is the DP-Alt 1.4 (Max 10Gbps) 6:4 Active Mux Linear Redriver supporting DP Link-Training Transparent for Source-side application. The device is compliant to the VESA DP Alt 1.4 and USB 3.1 Gen 2 industry standard.

Each of the DP1.4 and USB3.1 Gen2 differential signals can be easily adjustable with equalization, output swing and gain values by the pin/ I2C control setting. It can optimize the DP/USB 10Gbps signal performance over a variety of physical mediums by reducing Inter-symbol interference jitters.

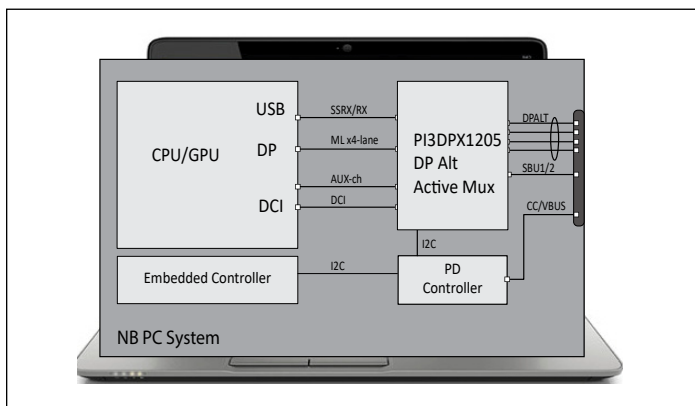
Non-blocking Linear Redriver provides 2x better additive jitter performance than the other conventional CMOS ReDriver. Linear Equalization does not block the Receiver DFE's adaptive channel controls, supporting DisplayPort Transparent LT(Link Training) without dependency of the DP-Aux channels listener.

This non-blocking linear redriver is named as "Trace Loss Canceling" technology, and supports the cascading connections between Host and Device high speed link. It means multiple Linear Redriver can be placed any locations to work seamlessly to compensate high insertion loss.

### Applications

- Notebook, Desktop, AIO PCs
- Tablets and Mobile Devices
- Docking, Embedded Systems

### Block Diagram



### Features

- Flexible DP 1.4 / USB 3.1 Gen 2 Type-C switching for DP-Alt Output
- Latency-free DisplayPort redriver for variable video frame rate control
- DP1.4 (8.1 Gbps) and USB3.1 Gen 2 (10 Gbps) standard compliant
- Receiver equalization, Flat gain, -1dB compression Output swing for each DP/USB mode.
- Non-blocking No-latency Linear Re-Driving with transparent DisplayPort Link Training support
- Doubled signal integrity performance than CMOS-based ReDriver
- Built-in control logic for Type-C plug/unplug normal and flipping orientations with I2C programming mode
- Slave I2C mode speed up to 1MHz
- Single Power Supply : 3.3V
- Package (Pb-Free & Green):
  - 40-pin TQFN (ZLB)

### Ordering Information

Part Number	Package	Description
PI3DPX1205AZLBEX	ZLB	40-Contact, Very Thin Quad Flat No-Lead (TQFN) (4x6mm)

#### Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <http://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free. Thermal characteristics can be found on the company web site at [www.diodes.com/design/support/packaging/](http://www.diodes.com/design/support/packaging/)
3. E = Pb-free and Green
4. X suffix = Tape/Reel