

13.5Gbps USB Type-C DP2.1/USB3 6:4 Crossbar Linear ReDriver with Low Equalizer Option

Description

The PI3DPX1225A is the USB Type-C DP-Alt DP 2.1 UHBR13.5/USB 3.2 Gen 2 6:4 Linear ReDriver supporting DP Link-Training Transparent for Source-side application. The device is compliant to the VESA DP Alt 2.1 UHBR13.5 and USB 3.2 Gen 2 industry standard.

Each of the DP 2.1 UHBR13.5 and USB 3.2 Gen 2 differential signals can be easily adjustable with equalization, output swing and gain values by the I2C control setting. It can optimize the DP/USB signal performance over a variety of physical mediums by reducing Inter-symbol interference jitters. The chip provides low equalizer options for short prechannel.

Non-blocking Linear ReDriver provides better additive jitter performance than the conventional CMOS Limiting 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.

Application(s)

- Gaming Notebooks
- Edge Computing

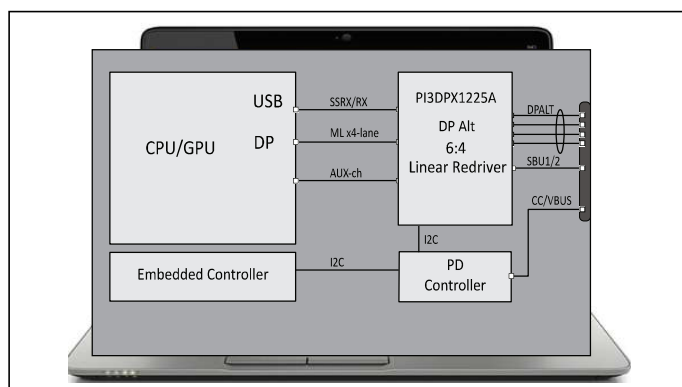


Figure 1-1 Gaming Notebook Application Diagram

Features

- Flexible DP 2.1 UHBR13.5/USB 3.2 Gen 2 Type-C Switching for DP-Alt Output
- Latency-Free DisplayPort ReDriver for Variable Video Frame Rate Control
- DP 1.4 (8.1Gbps), DP 2.1 UHBR10 (10Gbps), UHBR13.5 (13.5Gbps) and USB 3.2 Gen 2 (10Gbps) Standard Compliant
- Receiver Equalization, Flat Gain, -1dB Compression Output Swing for Each DP/USB Mode
- Non-Blocking Ultra Low Latency Linear Re-Driving with Transparent DisplayPort Link Training Support
- 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
- Packaging (Pb-free & Green):
 - 40-Pin, 4×6mm, WQFN (ZLB)
- 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.

<https://www.diodes.com/quality/product-definitions/>

Ordering Information

Orderable Part Number	Package Code	Package Description
PI3DPX1225AZLBEX	ZLB	40-Contact, W-QFN6040-40

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.