



# Type-C USB 3.2 and DisplayPort v1.4 Combination Linear Redriver

## PTN38003A

### Not Recommended for New Designs

This page contains information on a product that is not recommended for new designs.

Last Updated: Oct 23, 2023

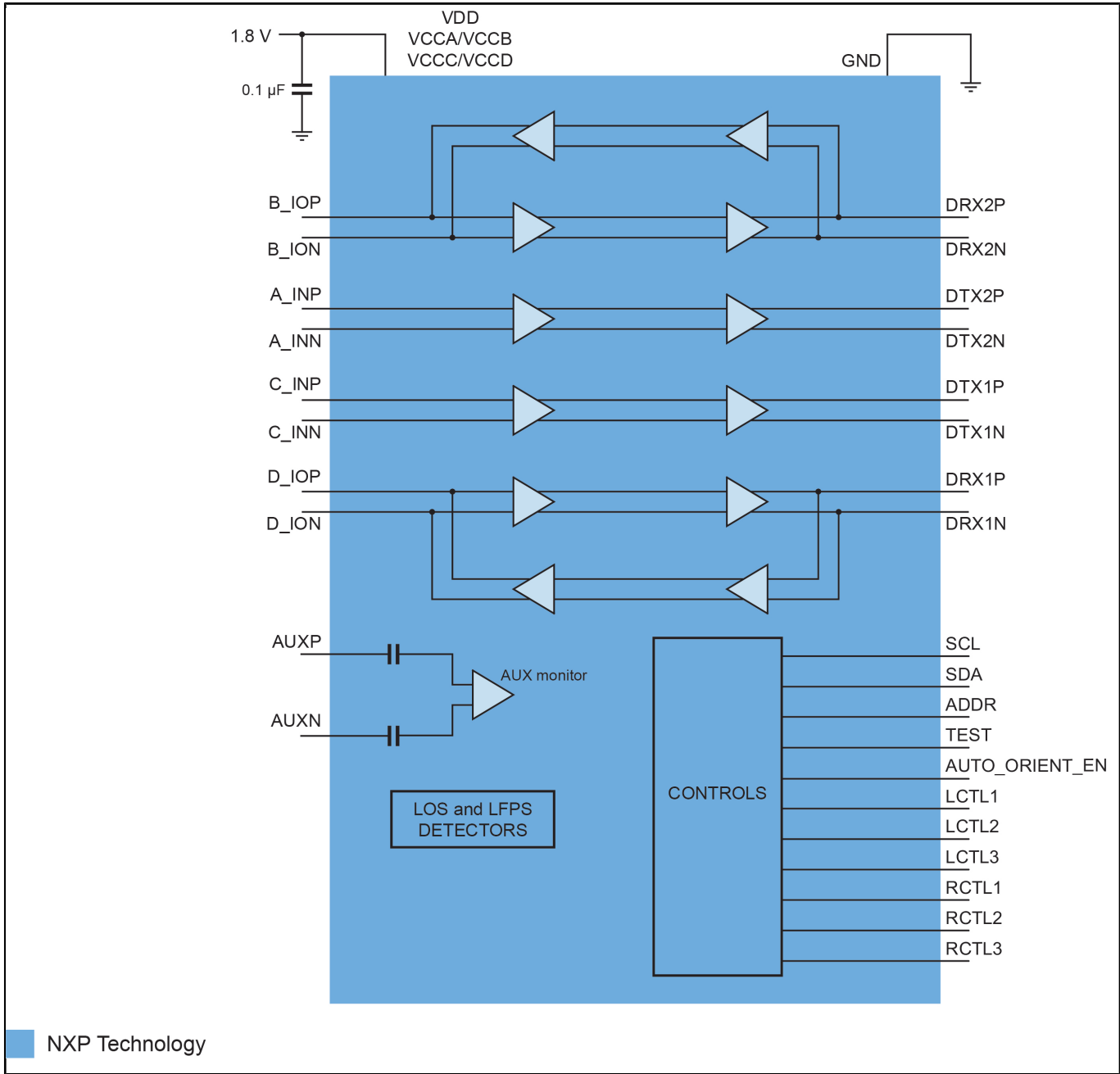
PTN38003A is a high-performance USB3.2 and DP1.4 combination linear redriver that is optimized for USB Type-C downstream facing (DFP) or upstream facing (UFP) ports. PTN38003A is a USB Type-C high-speed linear redriver used to meet signal quality enhancement requirements in platforms that support the USB 3.2 Gen2 and VESA DisplayPort 1.4 over USB Type-C Alt Mode Standards. The device provides programmable linear equalization, output swing linearity control by pin strapping or I<sup>2</sup>C control to improve signal integrity and enable channel extension by reducing inter-symbol interference (ISI). This device also monitors sideband signals in DP mode to optimize the configuration, power saving mode and performance.

For USB operation, PTN38003A has built-in advanced power management capability that enables significant power saving under USB3.2 low power modes (U2/U3). It detects LFPS (Low Frequency Periodic Signaling)/LBPM (LFPS Based PWM Message) signaling to configure the operation (USB3.2 Gen 1/Gen 2 and x1/x2) and link electrical conditions and it activates/deactivates internal circuitry and logic dynamically. The device performs these actions without host software intervention to conserve power.

For DisplayPort (DP) operation, PTN38003A monitors the AUX transactions and adjusts the DisplayPort channel setting during DP Link initialization and training. PTN38003A is powered from a 1.8 V supply. It is available in a small high performance HWFLGA36 package

For additional information and sample availability, contact your local [Sales Office](#).

### PTN38003A Block Diagram



View additional information for [Type-C USB 3.2 and DisplayPort v 1.4 Combination Linear Redriver](#).

**Note:** The information on this document is subject to change without notice.

[www.nxp.com](http://www.nxp.com)

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved. © 2024 NXP B.V.