

Description

The HXC44200 is a bi-directional dual channel PAM-4 CDR/Retimer. It supports a transmission data rate of 56Gbps PAM4 and 28Gbps NRZ. The HXC44200 can be used in a 50G SFP56 form factor and other small form factor modules. The device is optimized for Ethernet application. It is in full compliance with OIF CEI-56G-VSR and CEI-56G-MR. The total power consumption of the HXC44200 is below 700 mW.

The HXC44200 has built-in programmable and adaptive equalization in both the receiver and the transmitter paths to compensate for transmission line losses and inter-symbol interference.

Auto DC-offset calibration is implemented with auto phase calibration and the unique CDR / Retimer architecture enables independent receive and transmit CDR loop bandwidth optimization for increased Jitter Tolerance and reduced Jitter Transfer performance.

The chip has a built-in, single 14GHz master VCO providing the oscillator output for each channel. In addition, the self-test functions, such as a PRBS generator / checker, Jitter Tolerance, and Eye Open Monitor, provide designers and users with module-level diagnostics and function tests.

The HXC44200 also integrates a CPU for programmable control, which could reduce BOM cost and enable better module design. I2C interface is used to control the built-in CPU.

Typical Applications

- SFP56 Ethernet Transceiver

Features

- Single chip 56Gbps CDR/Retimer with transmit and receiver
- Supports 56Gbps PAM-4 and 28Gbps NRZ
- Output swing up to 850mVpp
- 7-bit resolution for programmable and adaptive CTLE up to 7 dB equalization n receiver
- Programmable 3-tap de-emphasis for a transmit
- Linearity compensation for output through a look-up table
- Independent, adaptive bandwidth control in RX CDR for optimum jitter tolerance
- Internal and automatic DC and phase offset calibrations
- Reference-less and Master channel-less operation
- On-chip testability: EOM, JTOL, PRBS generator/checker, user-defined pattern generator
- Embedded CPU with RAM/ROM and downloadable firmware
- I2C control interface (16-bit address and data)



Corporate Headquarters
6024 Silver Creek Valley Road
San Jose, CA 95138
www.IDT.com

Sales
1-800-345-7015 or
408-284-8200
Fax: 408-284-2775
www.IDT.com/go/sales

Tech Support
www.IDT.com/go/support

DISCLAIMER Integrated Device Technology, Inc. (IDT) and its affiliated companies (herein referred to as "IDT") reserve the right to modify the products and/or specifications described herein at any time, without notice, at IDT's sole discretion. Performance specifications and operating parameters of the described products are determined in an independent state and are not guaranteed to perform the same way when installed in customer products. The information contained herein is provided without representation or warranty of any kind, whether express or implied, including, but not limited to, the suitability of IDT's products for any particular purpose, an implied warranty of merchantability, or non-infringement of the intellectual property rights of others. This document is presented only as a guide and does not convey any license under intellectual property rights of IDT or any third parties.

IDT's products are not intended for use in applications involving extreme environmental conditions or in life support systems or similar devices where the failure or malfunction of an IDT product can be reasonably expected to significantly affect the health or safety of users. Anyone using an IDT product in such a manner does so at their own risk, absent an express, written agreement by IDT.

Integrated Device Technology, IDT and the IDT logo are trademarks or registered trademarks of IDT and its subsidiaries in the United States and other countries. Other trademarks used herein are the property of IDT or their respective third party owners. For datasheet type definitions and a glossary of common terms, visit www.idt.com/go/glossary. All contents of this document are copyright of Integrated Device Technology, Inc. All rights reserved.