



Products

Clock and Data Recovery (CDR)

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Clock and Data Recovery (CDR)

> **GN1113**
8.5 Gbps Fibre Channel Rx Repeater

> **GN1114**
8.5 Gb/s CDR with Equalizer Input and VCSEL Driver

> **GN2003S**
9.95 - 11.3 Gb/s Limiting Amplifier plus Clock and Data Recovery

> **GN2004S**
9.95 - 11.3 Gb/s Equalizer plus Clock and Data Recovery

> **GN2010D**
Dual 8.5G & 10G CDR with integrated DML driver and limiting amplifier

> **GN2010E**
Dual 8.5G & 10G CDR with intergrated EML driver and limiting amplifier

> **GN2012**
Dual 8.5G & 10G CDR with integrated limiting amplifier

> **GN2013A**
Limiting Amplifier plus Clock and Data Recovery IC with Manual Slice Level Adjust



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Semtech GN2405A

Quad 10Gb/s CDR with Rx Equalizer and Transmit De-Emphasis

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Overview

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The GN2405A is a quad repeater/re-timer device designed to enhance the reach and robustness of high speed serial links by compensating for transmission losses and re-setting the crosstalk and jitter budget.

The GN2405A features Gennum's proven reference-free CDR architecture which simplifies system design and reduces overall cost. Each channel supports independent locking to data rates from 9.95 - 11.3Gb/s. To enable backward compatibility with legacy data rates, half rate (5Gb/s) and quarter rate (2.5Gb/s) operation is also supported. Other rates can be supported using the re-timer bypass feature.

The GN2405A can be used in multiple applications. It can be used as a CDR in parallel optical modules or in active copper cable assemblies. It's flexible de-emphasis driver and jitter performance are ideal for use as a line card or backplane repeater.

Features

- ▶ Automatic locking from 9.95Gb/s to 11.3Gb/s
- ▶ Automatic rate detect for quarter rate (2.5Gb/s) and half rate (5Gb/s) modes
- ▶ Re-timer bypass up to 11.3Gb/s
- ▶ Low output jitter
- ▶ High input jitter tolerance, better than 0.7 UI
- ▶ No reference clock required
- ▶ Programmable output, with 400mV to 800mV differential output voltage range
- ▶ Independent channel operation
- ▶ De-emphasis to compensate up to 28dB of loss
- ▶ I²C control interface
- ▶ Automatically loads configuration data from E²PROM
- ▶ Loss of signal detect with adjustable threshold
- ▶ Low power dissipation
- ▶ Single 3.3V supply
- ▶ 7x7mm, 48-pin QFN package
- ▶ GN2405A and GN2406 are fully pin compatible

Applications

- ▶ Optical modules and active copper cable assemblies for:
 - ▶ Infiniband® SDR/DDR/QDR
 - ▶ 40Gb/s and 100Gb/s Ethernet
- ▶ Re-timer on line card for:
 - ▶ QSFP modules
 - ▶ Parallel optical modules
 - ▶ SFP+ modules
- ▶ 10Gb/s serial backplane retimer

Order Codes

Part No	Package
GN2405A-INE3	48 pin QFN

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