Products

Clock and Data Recovery (CDR)

Other products to view

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

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

GN2014A
XFP Tx Signal Conditioner with VCSEL Driver

Semtech GN2010D

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

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The GN2010D is an integrated bi-directional CDR, DFB/FP laser driver and limiting amplifier for XFP & SFP+ SONET, 10GBase-LR Ethernet and 8.5Gb/s Fibre Channel applications.

It is a highly-integrated, low-power, small-footprint device, that is ideal for small form factor optical modules.

The transmit path consists of optional input equalization, a multi-rate Tx CDR, and a DFB laser driver. The receive path is comprised of a limiting amplifier with programmable equalization, a multi-rate Rx CDR, and output de-emphasis. Both transmit and receive directions offer highly configurable eye shaping features, which allow for optimal electrical and optical outputs. Both directions also offer the option for polarity-invert, loopback, output mute, and programmable output equalization.

The GN2010D has an integrated analog to digital converter, which through the serial interface, provides digital diagnostic information on supply voltage, die temperature, laser bias current, and transmit optical power. The GN2010D is configurable for multi-rate operation. The GN2010D also offers integrated laser safety features.

The GN2010D device is packaged in a small-outline 5mm × 5mm 32-pin, high-frequency QFN package with exposed pad. The GN2010D is Pb-free, and the encapsulation compound does not contain halogenated flame retardant. This component and all homogeneous sub-components are RoHS compliant.

Features

- Dual CDR with 8.5Gb/s, 9.95-11.3Gb/s and 10.3-11.7Gb/s reference-free operation
- Integrated DFB/FP laser driver
- Integrated limiting amplifier with sensitivity less than 7mV
- Digital control through I2C or SPI interface
- Programmable Jitter Transfer bandwidth
- On-chip Automatic Power Control (APC) loop
- Bi-directional loopback
- Polarity invert and output available in both transmit and receive direction
- Programmable output de-emphasis
- Mission-mode eye monitor
- PRBS Generator and Checker
- Programmable Limiting Amplifier Equalization
- Programmable Transmit Input Equalization
- Programmable Input Slice Level Adjust
- Programmable LOS with adjustable threshold and hysteresis
- Programmable Sampling Phase Adjust
- Programmable Tx Fault signalling
- Integrated analog to digital converter, which provides access to digital diagnostic information on supply voltage, die temperature, laser bias current, and transmit optical power
- Single 3.3V supply (+5% / - 15%)
- Integrated laser safety features
- 5x5 32-pin QFN package
- -40°C to 100°C case operation
- Laser bias current up to 120mA
- Option for source or sink bias current
- Modulation current into differentially-driven 25? TOSA up to 80mA peak-to-peak
- 2x 25? single-ended terminations
- Transmitter disable pin
- Crossing point adjustment
- Jitter Optimization with Phase Adjust feature
- Optional on-chip APC loop
- Programmable Tx Fault signalling

Applications

- XFP & SFP+ 10Gb/s SONET optical transceivers
- XFP & SFP+ 10GBase-LR optical transceivers
- XFP & SFP+ long-reach 8.5Gb/s Fibre Channel transceivers

Order Codes

Part Number	Package
GN2010D-INE3	32-QFN