GN1406 Quad Multi-rate Retiming Redriver
GN1407 Quad Channel Redriver

FEATURES: GN1406

- Multi-rate operation (retimer enabled): 2.5Gb/s, 3.125Gb/s, 5Gb/s, or 6.25Gb/s
- Multi-rate operation (retimer bypassed): 1.25Gb/s to 8Gb/s
- Low power dissipation - 100mW per channel
- High input jitter tolerance
- Low output jitter
- Programmable high gain input equalization
- Programmable output de-emphasis
- Independent channel operation
- Low latency (< 3 bit period)
- On-chip channel diagnostics
- Independent channel operation
- I²C control interface

GN1407

- Multi-rate operation from 1.25Gb/s to 8Gb/s
- Low power dissipation - 70mW per channel
- Programmable high gain input equalization
- On-chip channel diagnostics
- Independent channel operation
- I²C control interface
- Low latency (< 1 bit period)

GENERAL DESCRIPTION

The GN1406 is a quad retiming redriver designed for 2.5Gb/s and 5.0Gb/s or 3.125Gb/s and 6.25Gb/s high-speed data. The GN1406 extends the reach and robustness of high-speed serial links by compensating for losses in the transmission medium and resetting the jitter budget.

The GN1407 is a quad channel redriver designed for 1.25Gb/s to 8Gb/s high-speed data. It extends the reach and robustness of high-speed serial links by compensating for loss in the transmission medium.

Both the GN1406 and GN1407 support independent channel configuration enabling host design flexibility and channel customization. The GN1406 and GN1407 are pin compatible.

APPLICATIONS

- PCI Express Gen1, Gen2, Gen3 copper and optical interconnect
- Infiniband SDR / DDR
- IEEE 10GBASE-CX4, 10GBASE-LX4, 10GBASE-KX4
- High-speed line card and backplane communication
- Parallel optics (QSFP, SNAP-12, POP-4)
- SAS/SATA
- RapidIO

Figure A: Typical application GN1406
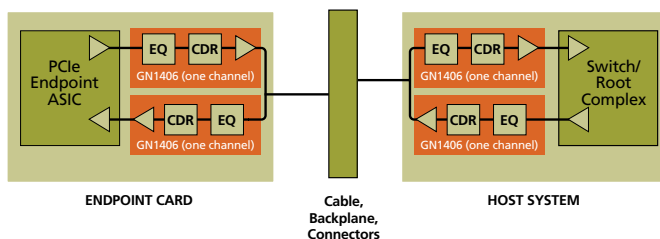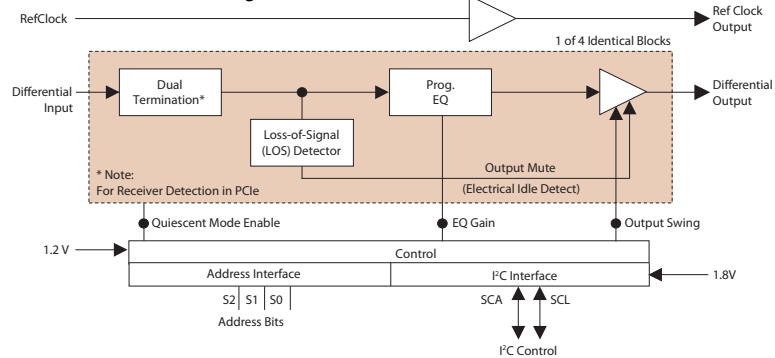

Figure B: Typical application GN1407
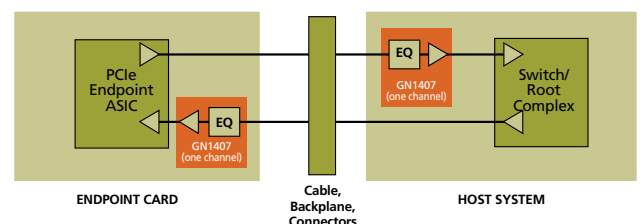
	GN1406	GN1407
Number of Lanes	4	4
Data Rate Support (Gb/s)	Retimed: 2.5, 3.125, 5, 6.25 Equalizer Only: 1.25-8Gb/s	1.25-8Gb/s
Power Consumption (per channel)	Retimed: 100mW Equalizer Only: 70mW	70mW
Jitter Compensation	Transmitter & Channel Deterministic & Random Jitter	Channel Deterministic Jitter
Protocol Transparent	✓	✓
Electrical Idle Preservation	✓	✓
Spread Spectrum Clocking	✓	✓
Individual Channel Control and Monitoring	✓	✓
Supports Receiver Detection by Dual Input Termination	✓	✓
Output De-emphasis	✓	✓
Configuration Through Micro-Controller or EEPROM	✓	✓
I²C Interface	✓	✓
8x8 QFN	✓	✓

GN1406: Channel Block Diagram
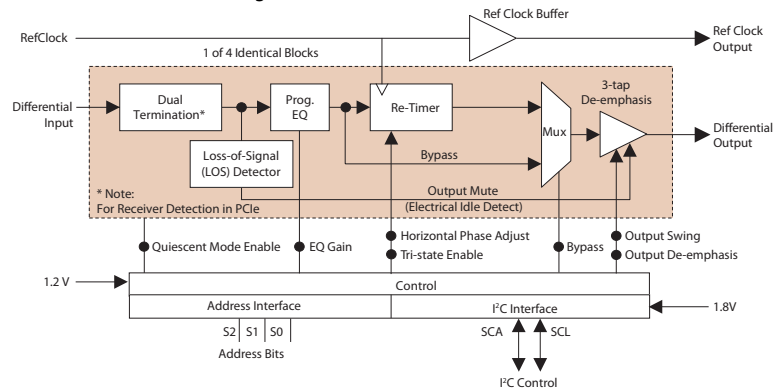
GN1407: Channel Block Diagram

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