4 Channel 1.0625 - 4.25 Gbit/s Fibre Channel SERDES

FEATURES

GENERAL

- Four independent 1.0625 - 4.250 Gbit/s bi-directional, Fibre Channel transceiver to 10-bit parallel interfaces.
- Each channel can be independently configured to run at half rate mode to support data rates to 1.0625 Gbit/s.
- Integrated serializer/de-serializer, clock recovery, clock synthesis, byte alignment.
- Integrated 8B/10B encoders with optional bypass.
- Simple power supply filtering requirements.
- Meets 1, 2 and 4G Fibre Channel Jitter specifications for optical applications.

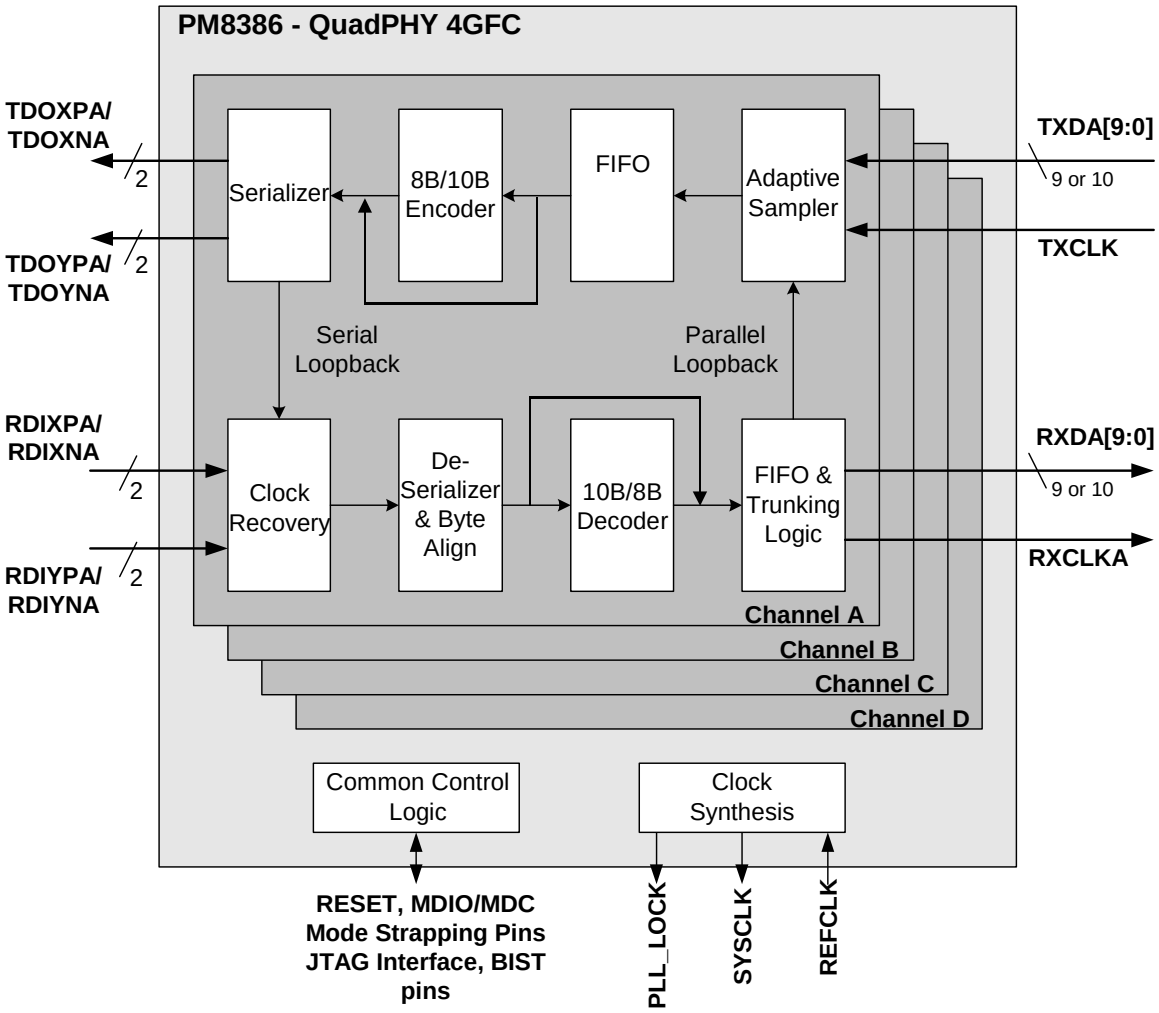
HIGH SPEED INTERFACE

- Selectable transmit pre-emphasis and receive equalization on a per-channel basis to allow maximum reach.
- Supports differential PECL REFCLK at 212.50 and 106.25 MHz.
- Programmable output current that directly drives 50 ohms.
- Provides internal 100 ohm differential termination on transmit and receive high-speed signals for optimal signal integrity.
- Lock times less than 300 bit times.

PARALLEL INTERFACE

- Parallel interface compatible with ANSI T11.2 FC-HSPI.
- Receive recovered clock rates of 212.50 MHz for 4.250 Gbit/s operation and 106.25 MHz for 2.125 Gbit/s operation.
- Transmit clock rates of 212.50 MHz for 4.250 Gbit/s operation and 106.25 MHz for 2.125 Gbit/s operation.
- Provides both source-simultaneous or source-centered transmit and receive parallel interface timing modes to simplify ASIC and FPGA system interface implementations.
- Interoperates with 1.8 LVCMOS

BLOCK DIAGRAM



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TEST FEATURES

- Supports optional 2-pin serial management interface using MDC/MDIO protocol for configuration and diagnostic access.
- Built in self-test (BIST) via internal packet generation and checking.
- Serial and parallel loopback modes per channel for testing and debugging.
- Standard IEEE 1149.1 JTAG test port for boundary scan board purposes.

PHYSICAL CHARACTERISTICS

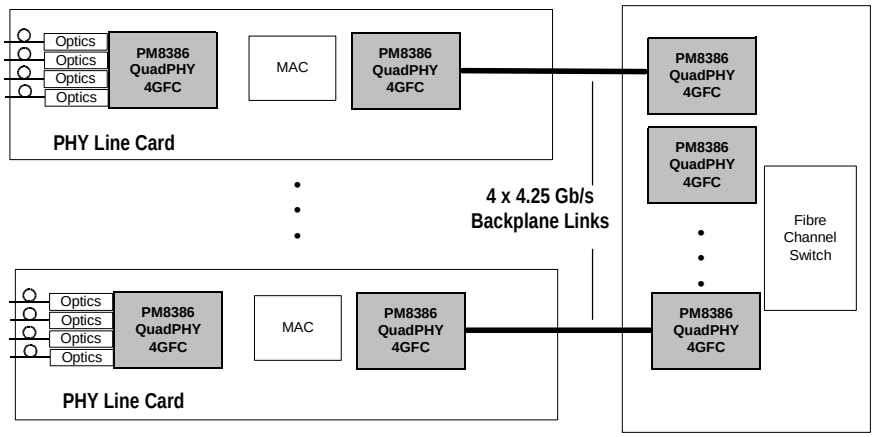
- 0.18 µ CMOS technology.
- 289-ball CABGA 19 x 19 mm package with 1 mm ball pitch.
- Operates over industrial temperature range -40 to +85 °C.

APPLICATIONS

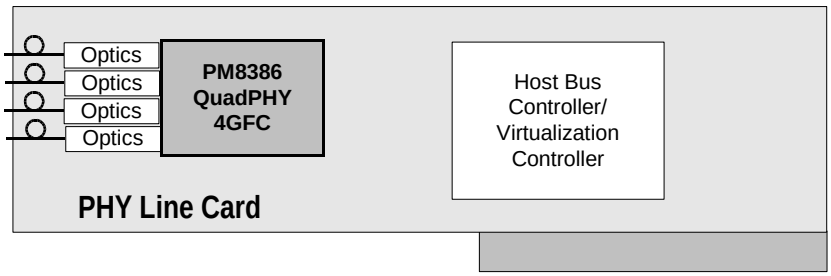
- 1.0625 Gbit/s, 2.125 Gbit/s and 4.250 Gbit/s Fibre Channel transceivers.
- High-speed serial backplanes.
- Storage Area Networking Systems.
- Work Station/Server Fibre Channel I/O.
- Military and industrial applications.

TYPICAL APPLICATIONS

QuadPHY 4GFC in Fibre Channel Switch Application



2/ 4G Fibre Channel Host bus Controller



Head Office:
PMC-Sierra, Inc.
8555 Baxter Place
Burnaby, B.C. V5A 4V7
Canada
Tel: 1.604.415.6000
Fax: 1.604.415.6200

To order documentation, send email to: document@pmc-sierra.com or contact the head office, Attn: Document Coordinator

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