AMCC

QT2042/QT2044
3.125 Gb/s XAUI Physical Layer IC for 10GBASE-LX4 and 10GBASE-CX4 Applications

Features
- 10GE, 10GFC data rate support
- Compliant to IEEE802.3ae standard, and XENPAK MSA
- MDC/MDIO and EEPROM interface
- Synchronization/lock indicator
- 20 mVpp per side input sensitivity on network side
- Support for Digital Optical Monitoring (DOM)

Test and Diagnostics
- Multiple loopback modes
- PRBS and jitter generators and checkers

Benefits
- Compliant with multiple protocols
- Industry standard operation
- Simplified communication
- Improved module diagnostics
- Reduced need for external post amplifier
- Increased flexibility in status and alarm reporting

Test and Diagnostics
- Assists in system test and diagnostics
- Reduces need for expensive test equipment

Description

The QT2042 is a XAUI PHY IC designed for 4 x 3.125 Gb/s Ethernet and 4 x 3.1875 Gb/s Fibre Channel 10GBASE-LX4 applications. The IC can interface with optical sub-assemblies for sending data over legacy Multi Mode Fiber (MMF) and Single Mode Fiber (SMF).

The QT2042 integrates four parallel 3.125 to 3.1875 Gb/s transmit and receive lanes into a single chip. Each lane includes receiver equalization, advanced clock and data recovery, performance monitoring and XAUI lane to lane de-skew functionality.

To provide easy access to control and status monitoring of both the chip and the module, the chips include a XENPAK/XPAK/X2 Multi Source Agreement compliant EEPROM interface and register set.

Fully configurable Link Alarm System Interrupt (LASI) provides critical module information to the host. The integrated limiting amplifier on the network side eliminates the need for an external amplifier in the 10GBASE-LX4 applications. The glueless Digital Optical Monitoring (DOM) interface provides up-to-date operating conditions of the electro-optical interface.
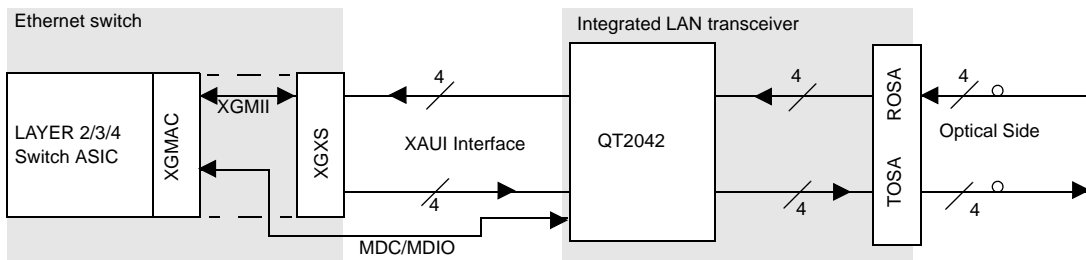
Characteristics
Electrical
Power supplies +1.8 V and +3.3 V

Power dissipation 1.85 mW$_{typ}$

Mechanical
Package 15 x 15 mm^2 BGA

Ball spacing 0.8 mm

System Block Diagram with the QT2042

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