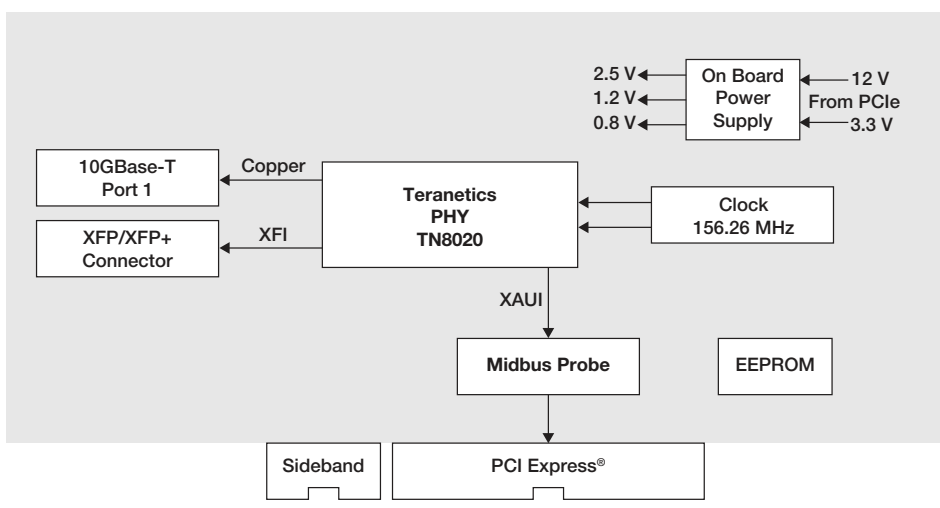QorIQ Multicore Processor Development

XAUI-Riser-B for QorIQ Communications Processors

Overview

The XAUI (10 gigabit attachment unit interface)-Riser-B Ethernet network card is designed to exercise the XAUI interface of QorIQ development systems supporting various communications processors, including P2041, P3041, P4040, P4080, P5010, P5020, P5021, P5040, T4160 and T4240. It also provides a total system solution to connect to the 10 GB network through the on-board Teranetics PHY through two modes: 10Base-T (UTP copper) or fiber optic. This solution provides two testing modes on a single board, saving the customer development cost of two separate boards to test either copper or fiber optic modes.

XAUI-Riser-B Card Block Diagram

Key Features

By employing a Teranetics TN8020 PHY, this network card provides a cost-effective solution featuring a single port for driving either the RJ45 connector or a fiber optic (SFP+) connector. The board's mode is engineered to configure automatically when either the UTP copper Cat-6a/Cat-7 cable or the fiber optic module is plugged into the corresponding connector. As shown in the block diagram above, the fiber mode is through the XFI bus, where either the XFP or SFP+ module can be used. An onboard 156.25 MHz XAUI LVDS clock is provided. The board plugs into the Freescale-defined serial PCI Express® riser connector carrying the XAUI signals and an inline sideband connector carrying the reserved and MDIO signals for the XAUI interface.

Technical Specifications

Board size is 4.37" x 8.0"

Onboard PHY Features

- Full IEEE® 802.3an standard compliance allows for use of powerful 10GBASE-T technology from the data center to the network's edge

  - Supports up to 100 m on Cat-6a and Cat-7 cable types

  - Supports up to 55 m on Cat-6 cable, already deployed in many data centers

  - Demonstrated to work up to 45 nm on Cat-5e, the most commonly installed UTP cable type

- Triple-speed operation enables compatibility with a previously installed base and allows an upgrade path to increased bandwidth

- Multi-rate support (100M/1G/10GBase-T) decouples the simultaneous upgrade of both ends of a link, which provides flexibility in existing installations and accelerates the adoption of new equipment

- Flexible switch/MAC interface support in current and next-generation NICs and switches for servers, enterprise networks and storage appliances:

  - 10G XFI–1 lane, 10.3125G

  - 10G XAUI–4 lane, 3.125G

  - 1G/100M SGMII–1 lane, 1.25G

- Built-in diagnostics helps data center operators localize cabling problems, thus minimizing the link downtime

- The XAUI-Riser-B is FCC compliant

- The QorIQ development system that XAUI-RISER-B plugs into must be running SDK 1.3.2 or later
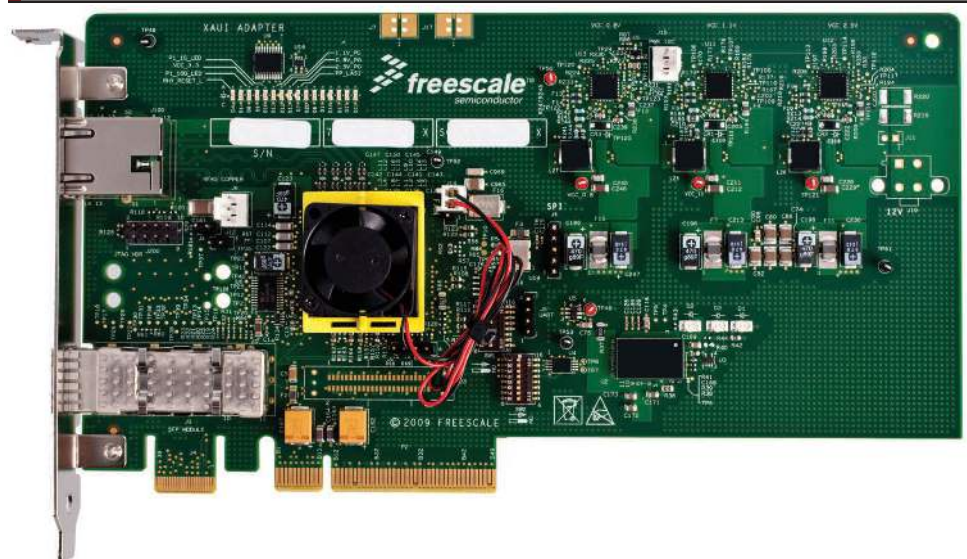
XAUI-Riser-B Contents and Ordering Information

Part number: XAUI-RISER-B

- Includes Cat-6a cable

- SFP+ module included

Suggested resale price: $1,300 (USD)

XAUI-Riser-B Board

For more information, visit freescale.com/QorIQ