

## 10 Gigabit Ethernet

Positioned as a high-speed, unifying technology for networking applications in LANs, MANs, and WANs, 10 Gigabit Ethernet will provide simple, high bandwidth at relatively low cost. In LAN applications, 10 Gigabit Ethernet will enable organizations to scale their packet-based networks from 10 Mbps to 10,000 Mbps, thereby leveraging their investments in Ethernet. In MAN and WAN applications, 10 Gigabit Ethernet will enable service providers and others to create extremely high-speed links at very low cost.



## XAUI HM-Zd Interoperability Platform

- A common platform for interoperability testing supported by members of the 10GEA XAUI Interoperability Group and the 10 Gigabit Ethernet Consortium
- Full duplex link testing
- 3 link lengths
  - 5 inches
  - 20 inches
  - 34 inches
- XAUI signals run in a system-like environment
  - FR-4
  - Multi-layer connections
  - 0.200" backplane thickness
  - MDIO / MDC Support

## Z-PACK HM-Zd

- Fully modular system- standard size is 25 mm
- Available in two versions:
  - 2 signal pairs per column (20 pairs per 25 mm)
  - 4 signal pairs per column (40 pairs per 25 mm)
- Dual beam contact system with fully encompassing grounds
- Robust mating interface with integral prealignment and mating built-in
- Optimized footprint for improved electrical performance

## XAUI Interoperability – Industry Support

The 10 Gigabit Ethernet Alliance has formed a working group, which is chaired by Tyco Electronics, to examine interoperability between different vendors' XAUI implementation. This group selected the Tyco Electronics XAUI HM-Zd Interoperability Platform as a common platform for interoperability testing. The work completed by this group has been adopted by the 10 Gigabit Ethernet Consortium, which will perform future interoperability testing.

PMC-Sierra, a member of the 10GEA, has tested their QuadPHY-II XAUI Interface with the XAUI HM-Zd Interoperability Backplane, and has been able to achieve error free operation at the maximum link length of 34 inches. PMC-Sierra has summarized this testing in its application support documentation.

For further details regarding the operation of the PM8355 QuadPHY II with the XAUI HM-Zd Interoperability Backplane, please contact Rachelle Trent at PMC-Sierra at [Rachelle Trent@PMC-Sierra.com](mailto:Rachelle_Trent@PMC-Sierra.com).

## PMC-Sierra PM8355 QuadPHY II

- 10Gbit/s, bi-directional, XAUI to XGMII link supporting the proposed IEEE 802.3ae standard
- Four independent 1.0 to 3.125 Gbit/s Serdes for FibreChannel, Infiniband and backplane applications.
- Half/Full rate mode selectable per channel.
- Integrated serializer/ deserializer, clock synthesis, clock recovery, and 8B/10B encode/decode logic.
- Under 2 Watts typical power.





**4-Channel 2.125, 2.5 and 3.125 Gbit/s Transceiver with Half-rate Support**

**EXAMPLE ARCHITECTURE**

The figure below shows a multi-service switching platform using QuadPHY-II devices for backplane interconnect and client signal physical interfaces.

As a serial backplane transceiver, the redundant high-speed links simplify the

interface to a working and protect fabric.

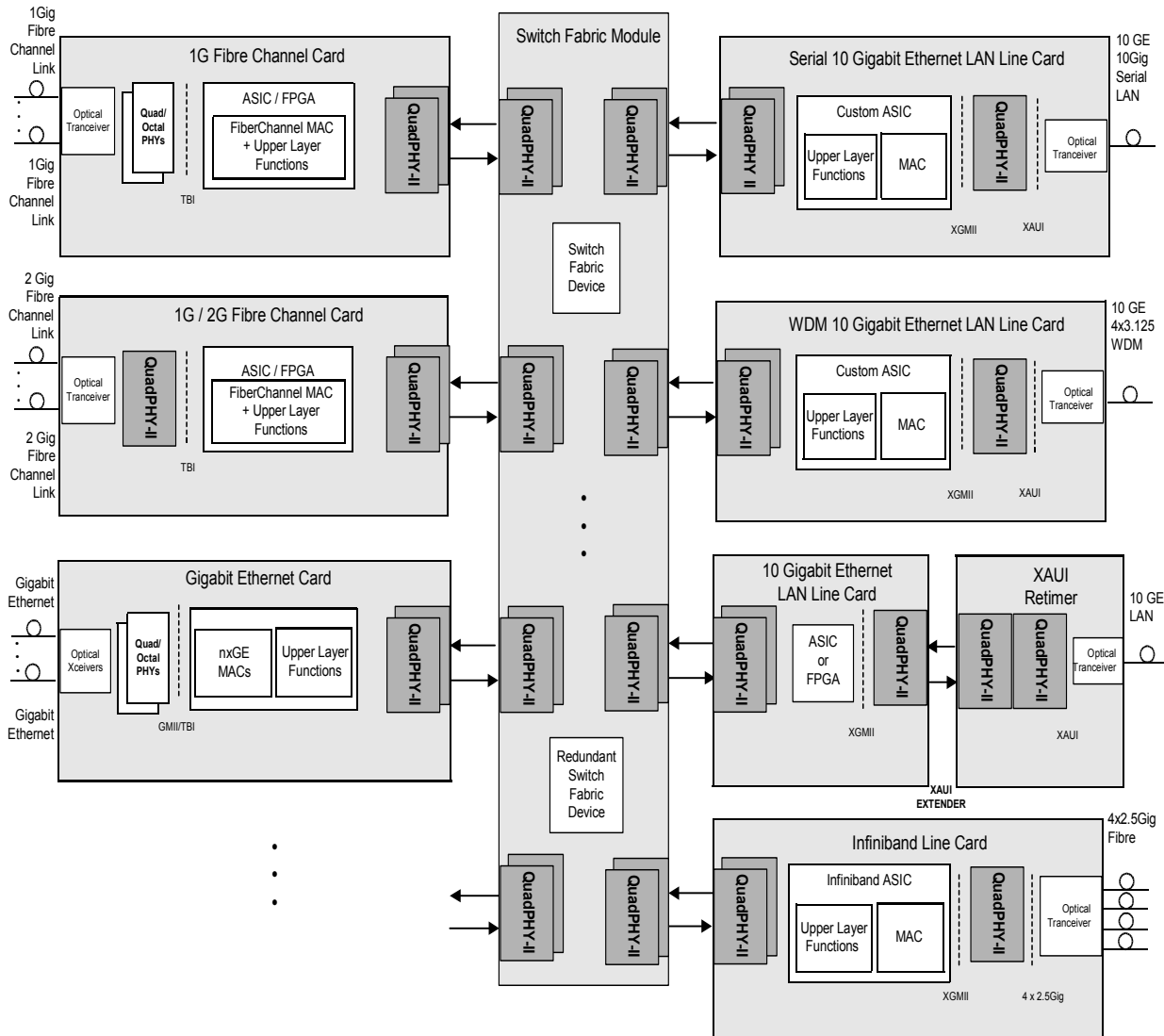
The 10GE line cards use the QuadPHY-II as a PHY supporting XAUI on the line side and mating to a 10GE MAC using XGMII.

Infiniband and Fibre Channel line cards applications are also shown. The half-

rate mode of the QuadPHY-II enables 1 and 2 Gbit/s support using the same device.

The other applications shown are a XAUI retimer and an XGMII extender where the MAC and Optics module separated by longer distance.

**APPLICATION EXAMPLE - MULTI-SERVICE SWITCHING PLATFORM**



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