CYCLONE Microsystems™
Intelligent I/O Controllers

PCI-E 750 Dual Gigabit Ethernet I/O Controller

∅ ZERO COPY

♦ **Dual Gigabit Ethernet Ports**

♦ **Fast Embedded Processor**

♦ **PCI Express x8 Interface**

♦ **ZeroCopy TCP**
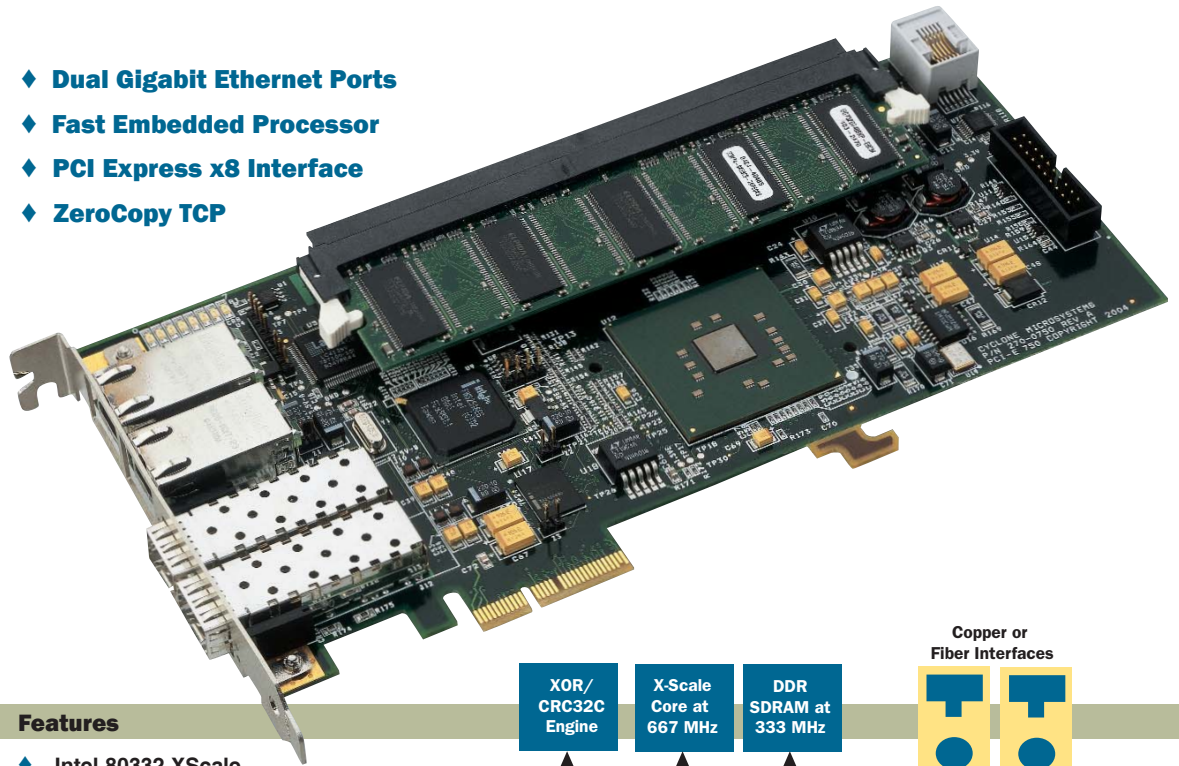
Features

♦ **Intel 80332 XScale Microarchitecture**
- CPU core speed of 667 MHz
- Integrated PCI-Express x8 to PCI-X 133 MHz Bridge
- Two Channel DMA Controller with Scatter/Gather Support
- RAID 5 XOR and CRC32C Engine

♦ **DDR 333 SDRAM**
- Up to 1 Gbyte
- Dual Ported to Processor, Internal PCI-X Bus, and Host

♦ **Primary PCI-Express x8 Interface**
- 20 Gbits/sec Bandwidth

♦ **Secondary PCI-X Bus**
- 133 MHz/64 bit

♦ **Dual Gigabit Ethernet Controller**
- Supports either two copper (1000BaseT) or two Fiber Optic (1000BaseSx/1000Base Lx) Ports

♦ **Up to Eight Mbytes of FLASH**

♦ **Serial Console Port**

♦ **Board Support Packages**
- Breeze Development Environment
- ZeroCopy TCP
- VxWorks
- Linux 2.6

Block Diagram

Copper or Fiber Interfaces

| XOR/CRC32C Engine | X-Scale Core at 667 MHz | DDR SDRAM at 333 MHz |

Internal Bus

ATU

Dual Gb Ethernet Controller

Secondary PCI-X Bus 133 MHz/64 bits

PCI-Express to PCI-X Bridge

Primary PCI-Express x8
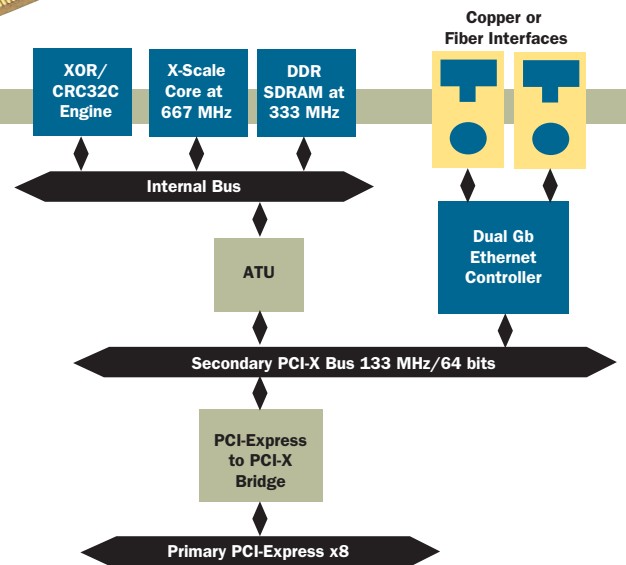
Product Description

The PCI-E 750 is an Intelligent Dual Gigabit Ethernet I/O Controller that is applied in embedded systems for real-time protocol processing, security, and high throughput LAN applications. The PCI-E 750 supports Intel's highly integrated 80332 XScale Microarchitecture with a tightly coupled XScale Core, Memory Controller and PCI-Express to PCI-X bridge. A Dual Gigabit Ethernet Controller supports either two copper or fiberoptic Ethernet interfaces.

Embedded/Real-time development is supported by the availability of the Breeze Development Environment, VxWorks, ZeroCopy TCP, and Linux 2.6.
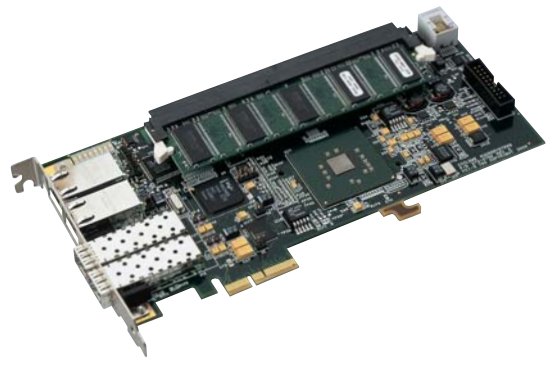
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Technical Specifications

Processor

Microprocessor	Intel XScale 80332 at 667 MHz
On-chip Cache (I/D)	32 Kbyte, 32 way, set associative

Memory

Memory Capacity	256 Mbytes, 512 Mbytes, or 1 Gbyte
Architecture	Synchronous Double Data Rate (DDR SDRAM) with optional ECC
Performance	333 MHz
Flash	4, 8, or 16 Mybtes

PCI-Express Interface

PCI Express x8

Asynchronous Serial Port

Controller	16C550 UART
Speed	300 to 115,200 bps
Connector	RJ-11, on top edge of board

Ethernet Interface

Controller	82546GC Dual Gigabit Ethernet Controller with Integrated PHY
Interface Speed	1000Base-T/100Base-T/10Base-T Auto Negotiable
Connectors	1000Base Tx- Dual RJ-45, CAT 5 UTP or 1000Base-Fx - Dual SFP
LEDs	Activity and Link Status LEDs for each Ethernet Port

Miscellaneous

Two Temperature Sensors

Environmental

Physical Dimensions	PCI Mid-Length Card 9.4" wide and 4.2" high
Operating Temperatures	0 to 55 Degrees Celsius
Storage Temperatures	– 55 to 125 Degree Celsius

Relative Humidity	0 – 95%
Power Requirements	
+3.3V	9.78 Watts Watts Typical, 10.00 Watts Maximum
+12V	8.4 Watts Typical, 12.02 Watts Maximum

PCI-E 750 Ordering Information

CM-750-*ABB-CC-D*

A – Flash ROM

(1) 4 Mbytes
(2) 8 Mbytes
(3) 16 Mbytes

BB – Fiber Transceivers

(F0) No Transceivers Populated
(F1) 850nm
(F2) 1310nm
(C0) Copper Only – No SPF (L) – Linux 2.6

Commonly Stocked Configuration	CM750-1F0-2M-B
800-0750	PCI-E 750 User's Manual

CC – Memory Capacity

(1G) 1 Gbyte
(5M) 512 Mbytes
(2M) 256 Mbytes

D – Firmware/Operating System

(B) – Breeze
(V) – VxWorks 5.4
(Z) – ZeroCopy TCP
(L) - Linux 2.6

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