CYCLONE
Microsystems™
Intelligent I/O Controllers

PCI-739

Intelligent Gigabit Ethernet Controller

♦ **Host Processor Offload**

♦ **Zero Copy TCP/IP Stack**

♦ **Linux, VxWorks Support**

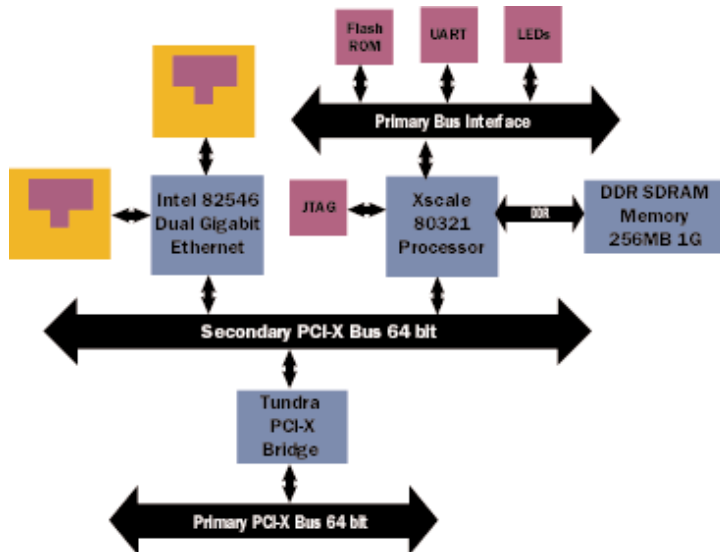## Features

♦ **Intel 80321 XScale Processor at 600 MHz**

♦ **PCI-X Primary bus at up to 133 MHz**

♦ **Intel 82546 Dual Gigabit Ethernet Controller**

♦ **PMC Interface 64bit/66 MHz**

♦ **Up to 1 GB of 200 MHz DDR SDRAM**

♦ **PCI-X Internal Bus at 100 MHz**

♦ **Four Mbytes of Flash ROM**

♦ **Console Serial port**

♦ **Software Support**

- **Breeze Development Environment**
- **TimeSys Linux**
- **VxWorks with Support for Zero Copy TC/IP Stack**

Product Description

The PCI-739 is an intelligent Gigabit Ethernet Controller that is used to assist the host processor with LAN processing in embedded and real time systems. The PCI-739's 80321 XScale architecture, coupled with a fast memory subsystem and PCI-X busses and an efficient zero copy TCP/IP stack, rapidly processes TCP/IP, time stamping, or security functions. The PCI-739 is applied in demanding embedded LAN applications including seismic exploration, medical imaging and video-on-demand.

The PCI-736 is supported by Cyclone's Breeze Development Environment, TimeSys Linux with Real Time CPU Reservations and VxWorks 5.4/Tornado 2.2. The three offerings cover a variety of real time project requirements from simple embedded code to sophisticated real time systems. Host drivers for Win2000 are also available.

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Technical Specifications

Processor

Microprocessor:	Intel XScale 80321 at 600 MHz
On-chip Cache (I/D):	32 Kbyte, 32 way, set associative

Memory

Memory Capacity:	128, 256, 512 Mbytes, or 1 Gbyte
Architecture:	Synchronous Double Data Rate (DDR SDRAM) with optional ECC
Performance:	200 MHz
Flash:	4 Mbytes of Sector Programmable Memory

PCI Interface

Primary PCI Interface:	PCI 2.2 (Max 64 bit/133 MHz) 3.3V Signaling
Secondary	PCI-X (Max 64 bit/100 MHz)

Ethernet Interface

Controller:	82546 Dual Gigabit Ethernet Controller with Integrated PHY
Interface Speed:	10/100/1000Base-T Auto Negotiable
Connectors:	RJ-45, CAT5 UTP, One on face panel, one exiting top of board
LEDs:	Activity and Link status on top edge of the board

PCI Mezzanine Card Slot IEEE P1386.1

Address/Data:	A64/D64 PMC P11, 12, 13
PCI Bus Clock:	33/66 MHz
Signaling:	+3.3V
Power:	+3.3V, +5V, +12V, 7.5 watts maximum
Module Types:	One single-wide, front panel I/O

Miscellaneous

Two Temperature Sensors

Asynchronous Serial Port

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

Environmental

Physical Dimensions:	PCI Short Card 9.400" wide and 4.200" high
Operating Temperatures:	0 to 55 Degrees Celsius
Relative Humidity:	0 – 95%

Power Requirements:	
+3.3V	8.18 Watts Typical, 11.45 Watts Maximum
+5V	0.10 Watts, Typical, 0.25 Watts Maximum
Storage Temperatures:	– 55 to 125 Degree Celsius

Ordering Information

PCI-739

CM-739-256-00-X	PCI XScale 80321 with Gigabit Ethernet and 256 Mbytes SDRAM
CM-739-512-00-X	PCI XScale 80321 with Gigabit Ethernet and 512 Mbytes SDRAM
CM-739-1G-00-X	PCI XScale 80321 with Gigabit Ethernet and 1 Gbyte SDRAM

X– (B) Breeze Development Environment — Default Configuration
(V) VxWorks — Loaded after review of customer's Wind River Site License
(L) TimeSys Linux-Loaded after one time purchase of LSP

800-0739	PCI-739 User's Manual

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