IXF1002 Dual-Port Gigabit Ethernet MAC

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Product Highlights

- Two full-duplex independent 1-Gbps MACs

- GMII or GPCS physical layer interface

- VLAN tags: add/strip/replace on transmit

- IEEE 802.3x and 802.3z compatible for auto-negotiation and flow control

- 30 to 80 MHz IX Bus speed (5.12 Gbps @ 80 MHz)

- 8-bit or 16-bit CPU interface

- Handles SNMP and RMON counters

- Independent 4-Kbyte Rx FIFO and 2-Kbyte Tx FIFO for each MAC

- 304-pin BGA package

- Low-power 3.3V with 5V tolerance CMOS device

Product Description

Gigabit Ethernet technology in server and high-end desktop PC network environments is being accelerated by the introduction of Gigabit Ethernet copper PHY (Physical Layer) devices. At the same time, the expanding Internet economy requires shorter design cycles to meet the continuing demand for value-added features. New blades for existing chassis-based routers and switches have a fixed form-factor and limited power budgets. At the same time, designers must meet the demand for increased port density. The IXF1002 dual-port Gigabit Ethernet MAC provides the ideal solution for these design requirements, enabling faster time-to-market, with reduced development costs. For network switch vendors, the IXF1002 dual-port Gigabit Ethernet MAC provides a gigabit Ethernet uplink for 10/100 Mbps switches.

The IXF1002 is the industry's first integrated solution of its kind for router and switch applications. The IXF1002 integrates two MAC ports to simplify board design, while helping to reduce board real estate requirements, power dissipation, and overall solution cost. In addition, it enhances system performance by implementing programmable features in hardware to offload tasks from the switch or router engine. Both unidirectional and bi-directional IX Bus modes provide options for implementing a variety of switch system architectures. Unique features such as VLAN tag replace, strip, add capability, and header pre-processing enable the IXF1002 to offload tasks from the switch or router engine. Redundancy is a required feature of Gigabit Ethernet systems. The IXF1002 meets this requirement through the integration of two MACs on one device.

The glueless interface to the IXP1200 Network Processor enables designers to easily build a router engine with Gigabit Ethernet backbone connectivity and then enhance it with a growing family of optional IX bus support peripherals and development tools. These include the IXF1002 dual port gigabit Ethernet MAC and the IXP12DE network processor development environment. Whether used alone in a network system design, or as a companion to the IXP1200 network processor, the IXF1002 simplifies system design and enables glueless Gigabit Ethernet backbone connectivity.

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Features

- Two full-duplex independent 1-Gbps controllers

- Up to 80 MHz IX Bus speed

- IX Bus 32-bit or 64-bit bi-directional and 32-bit unidirectional modes

- VLAN tag, replace, and add capabilities on transmit

- Glueless interface to IXP1200 network processor

- GMII or GPCS physical layer interface

- IEEE 802.3x and 802.3z compatible

Benefits

- Helps simplify hardware design, reduce board space, reduce time-to-market, reduce risk and power dissipation

- Helps to eliminate data flow bottlenecks

- Implements various architectures and optimizes performance

- Offloads switch/router engine from performing these tasks

- Helps to reduce system development time, system cost, risk, and time-to-market

- Interfaces to gigabit Ethernet standard transceivers

- Supports auto-negotiation and flow-control support

Intel® Internet Exchange™ (IX) Architecture

The Intel IX architecture is a comprehensive family of feature-rich silicon and software building blocks and tools that accelerate development of powerful, flexible network and communications products.

Ordering Information

Contact an authorized Intel distributor for complete ordering details.
To order the IXF1002 dual-port Gigabit Ethernet MAC specify part number GCIXF1002EC

Product Specifications

Power supply	3.3V
Operating temperature range	0ºC to 70ºC
Storage temperature range	-55ºC to 125ºC
Power dissipation	3W @ 80 MHz
Package	304-pin ESBGA

Intel Access

Developer's Site	http://developer.intel.com/
Intel Internet Exchange Architecture Home Page	http://www.intel.com/IXA
Other Intel Support:	http://developer.intel.com/design/litcentr/
Intel Literature Center	(800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.
General Information Hotline	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

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