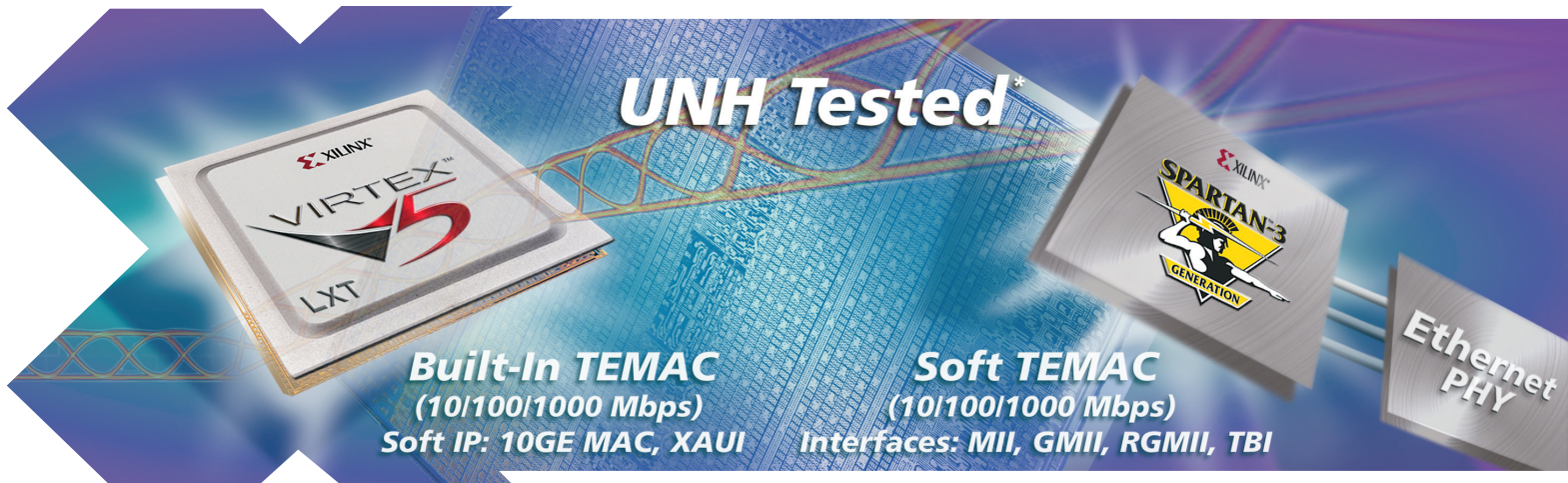


Xilinx Ethernet Solutions Made Easy



Ethernet Design Challenges

- Scaling performance to meet increasing bandwidth requirements
- Building systems for smaller form factors, stringent power budgets at lower costs
- Getting to market faster with proven interoperability and lowest risk

Xilinx Ethernet Solutions

- Virtex™-5 FPGAs with built-in Tri-mode Ethernet MAC (TEMAC) & Soft 10GE MAC enable high-performance, scalable Ethernet applications
- Spartan™-3 generation FPGAs provide a low-cost solution
- Ultimate interface flexibility – MII, GMII, RGMII, SGMI, XGMII and XAUI
- Can use as peripheral to MicroBlaze™ or PowerPC™ processor
- UNH interoperability tested

Xilinx helps you implement your Ethernet applications in the shortest time, with easy-to-use solutions that meet performance, power, and cost targets.

Virtex family

Future-proof your Application with Scalable Performance

Ethernet specifications are evolving and being adopted beyond communications into industrial, broadcast and other applications. Virtex-5 Platform FPGAs allow you to scale performance from 10/100 Mbps to GbE and also to 10GE line rates. Design for today and tomorrow with cross-platform pin compatibility.

Reduce Power with Multiple Embedded Blocks for TEMAC Function

65nm Virtex-5 FPGAs with built-in, power optimized RocketIO™ GTP transceivers and built-in Tri-mode Ethernet MAC ensure lowest power consumption and reduced cost.

Spartan-3 generation

Lower Cost for a Wide Range of Applications

Low cost Spartan-3 generation FPGAs, with soft Ethernet MAC LogiCORE™ IP that can integrate with external Ethernet PHY interfaces, provide the lowest cost programmable Ethernet solution for consumer, industrial and other high-volume applications.

Reduce Risk with Proven Compliance & Protocol Characterization

Xilinx Ethernet solutions are UNH-tested and have been integrated in numerous customer designs. Also Xilinx provides Gigabit Ethernet & XAUI protocol-specific characterization reports across process, voltage and temperature.

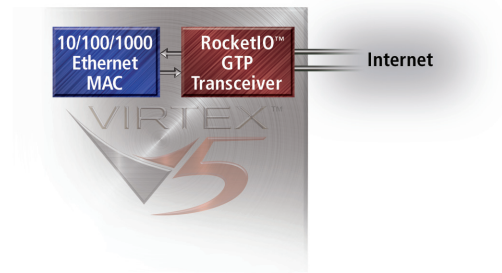
Finish Faster with Easy-to-Use Development Kits

Xilinx offers complete solutions kits that include hardware verified IP, tools, reference designs, and development boards to help you reduce design time by more than 50%.

High Performance Solutions for Ethernet – Virtex FPGAs

Virtex-5 LXT/SXT FPGAs

- 10/100/1000 Mbps solutions (Hard and Soft IP)
 - Soft IP or Built-in solution: TEMAC – 10/100/1000 Mbps modes of operation
 - Designed to IEEE 802.3-2002 specs
 - UNH interoperability tested
 - Jumbo frames support
 - Supports Flexible auto-negotiation
 - IP delivered through CORE Generator technology
- 10 Gbps solutions (Soft IP cores – 10GEMAC & XAUI)
 - Designed to IEEE 802.3ae-2002 / 10GE specs
 - Supports 32-bit DDR / 64-bit SDR user backend interface
 - Highly Customizable: resource use vs functionality
 - Supports Rx / TX Flow control
 - IP delivered through CORE Generator technology
- Ethernet Statistics IP LogiCORE
 - Easy interface to Ethernet MAC LogiCORE IPs
 - Provides user configurable collection of statistical counters

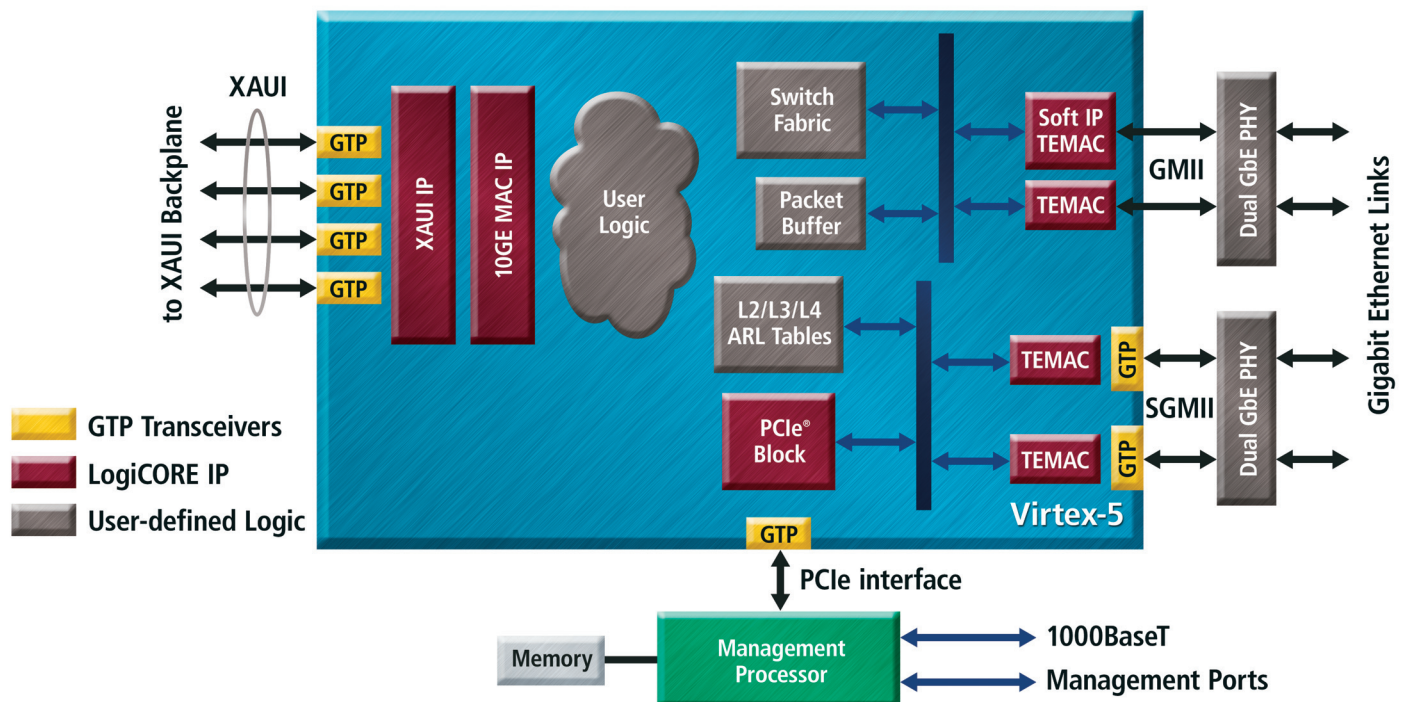


MAC ↔ PHY Interfaces

Supported on Virtex-5 / Virtex-4 / Virtex-II Architectures

Parallel Interfaces (using SelectIO™)	MII / GMII
	RGMII
	XGMII
	TBI (Ten Bit Interface)
Serial Interfaces (using high-speed serial transceivers)	MII / GMII
	1000Base-X
	XAUI

Virtex-5 FPGA-based Ethernet Switching with Custom Offload and Look-up



Low Cost Solutions for Ethernet – Spartan FPGAs

Spartan-3 Generation FPGAs

- 10/100/1000 Mbps solutions - Soft IP cores
 - Designed to IEEE 802.3-2002 specs
 - Jumbo frames support
 - Supports Flexible auto-negotiation
 - IP delivered through CORE Generator technology
 - Reference Designs with DMA available for Ethernet peripheral in EDK environment
 - Supported flows and configurations through Xilinx Platform Studio/Base System Builder
- Ethernet Statistics IP LogiCORE
 - Easy interface to Ethernet MAC LogiCORE IPs
 - Provides user configurable collection of statistical counters

MAC ↔ PHY Interfaces

Supported on Spartan-3 FPGA Architectures

MII

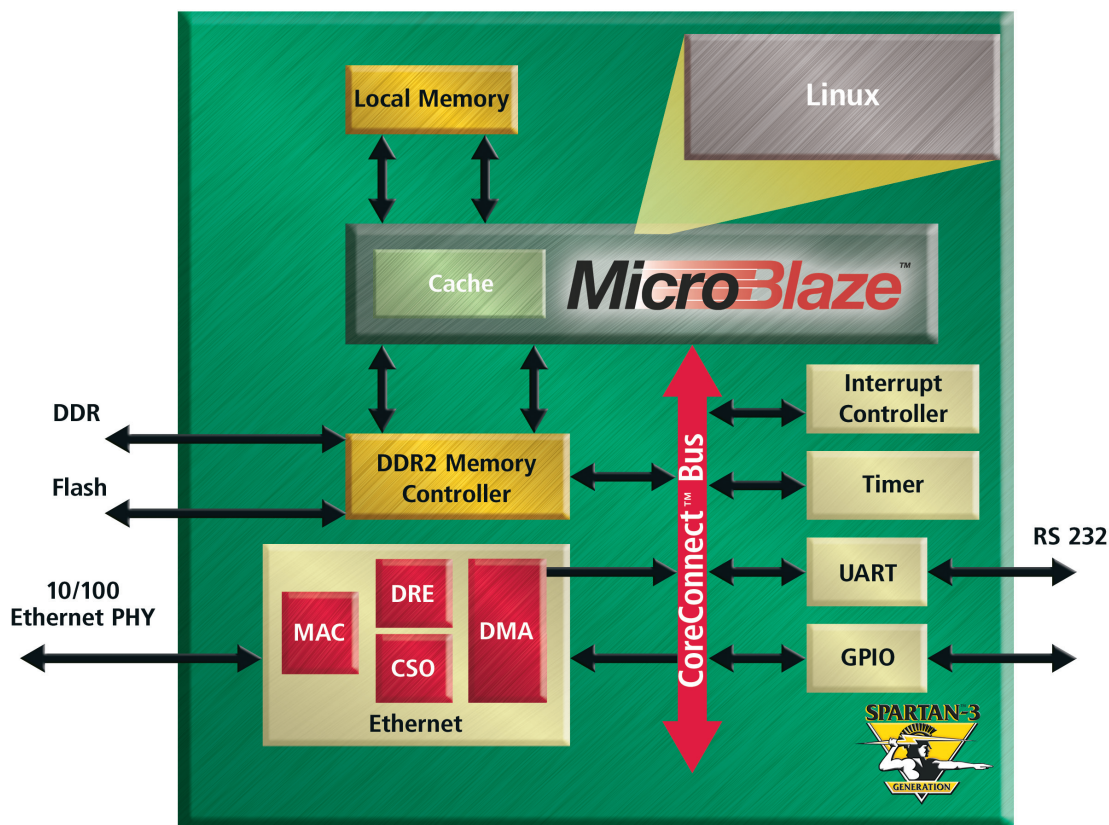
GMII

RGMII*

TBI (Ten Bit Interface)

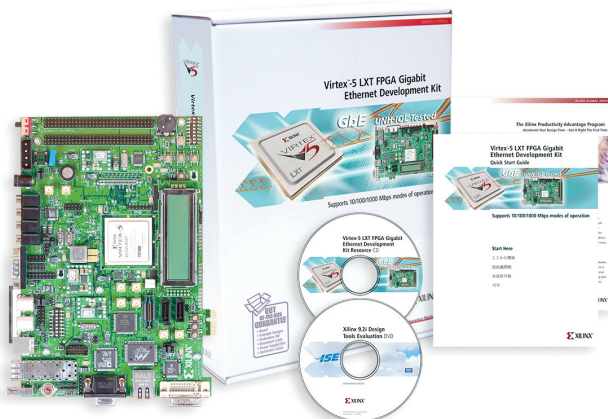
** not supported on S3E FPGA*

Spartan-3 FPGA-based MicroBlaze processor-controlled 10/100 Ethernet subsystem



Ethernet Development Kits with Out-of-the-Box Guarantee

Virtex-5 FPGA Gigabit Ethernet Development Kit



MSRP: \$1395

Development Kits include:

- Development Board
- Download Cable
- Software (60-day evaluation)
- Access to LogiCORE IP
- Reference Designs
- Drivers and GUI
- Quick Start Guide (Multi-lingual)
- Technical Documentation

Spartan-3 FPGA Boards supporting Ethernet Development Kit



Spartan-3A FPGA Starter Kit – \$225 (Shown above)
Spartan-3AN FPGA Starter Kit – \$239
Spartan-3E FPGA MicroBlaze Development Kit – \$595

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Learn More about Xilinx Ethernet Solutions

- Watch online webcast & demos
- Sign up for Ethernet class
- Order a development kit
- Call your Xilinx sales representative for a demo
- Contact platformsteam@xilinx.com

TAKE THE NEXT STEP

Visit us online at www.xilinx.com/ethernet

* The Virtex-5 FPGA embedded TEMAC has been tested at UNH-IOL workshops for MAC, PCS, flow control, and auto-negotiation conformance with the IEEE 802.3 specification, as well as point-to-point interoperability capabilities.



www.xilinx.com

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