

The most comprehensive, optimized set of IP Cores:

Audio, Video, Broadcasting	JPEG Codecs, MPEG-2, MPEG-4, AES, H.264, Color Space Converters
Automotive	CAN Bus Controller 2.0A/B, 8051 Compatible Microcontroller, LIN Controller, MicroBlaze™, Video Compression Encoder, PCI
Communications & Networking	PCI, PCI Express, 10/100 MAC, GigE MAC, Mappers/Demappers and Framers/Deframers (STM0/OC1 – STM4/OC12), SDRAM Controller, DDR, DUC/DDC, HDLC Single Channel
Consumer	PCI, PCI Express, MPEG-2, MPEG-4, RSDS, USB 2.0, I2C, MicroBlaze
Industrial, Scientific & Medical	10/100 Ethernet, 1GB Ethernet, CAN Bus Controller 2.0A/B, Filters, Correlators, PicoBlaze™, MicroBlaze
Storage Area Networking	Serial Communication Controller, ATA and Serial ATA I/II Host Controller

Lowest Cost Connectivity for Chips, Boards and Backplanes

Xilinx offers IP cores for implementing your lowest cost system interconnectivity standards such as PCI Express, System Packet Interface (SPI-4.2/SPI-3)

PCI bus interfaces

- Best value for PCI 32/33 with effective cost below 75 cents*
 - Programmable and Flexible PCI Express solution.
- The PCIe PIPE Endpoint LogiCORE™ combined with a discrete PCIe PHY offers a complete sub-\$12 PCIe Endpoint solution.

Gigabit Ethernet, 10/100 Ethernet, 10/100 Ethernet Lite

- Low cost Programmable and flexible 1 Gig (and under) Ethernet solution for less than \$10.00*
- A 10/100 Ethernet MAC core with OPB or PLB interface for embedded MicroBlaze and PowerPC™ solutions, a standalone Tri-Mode Ethernet MAC core.

CAN: Low cost automotive bus interface

- Effective cost of only \$1.27*

* Note: Pricing is based on typical implementation in the slowest speed grade, cheapest package with end of 2006 high volume pricing

Spartan-3 Generation IP: Optimized for the World's Lowest-Cost FPGAs

Lowest Cost and Maximum Performance DSP Solution

Today, FPGAs and DSP processors often work together to meet the signal processing challenges in various high-performance digital communication systems, video/imaging, multimedia, and Aerospace and Defense systems. FPGAs complement DSPs in system logic consolidation, bus interfacing/bridging and signal processing acceleration. Xilinx and our partners offer a wide range of flexible DSP IP to help you get to market faster.

Error correction blocks

- Turbo Product Code Encoder, Turbo Product Code Decoder, Viterbi Decoder, Reed-Solomon Encoder, Reed-Solomon Decoder, Turbo Convolutional Code Encoder, Interleaver/De-interleaver

Modulation Demodulation

- Direct Digital Synthesizer, J.83 Universal Modulator Annex B, J.83 Universal Modulator Annex A/C, Digital Up Converter, Digital Down Converter

Transforms

- 2-D Discrete Cosine Transform, 1-D Discrete Cosine Transform, Fast Fourier Transform, 32 point Complex FFT

Filters

- Distributed Arithmetic FIR Filter, MAC filters, Cascaded integrator Comb (CIC)

Math Functions

- Floating Point Operator, Direct Digital Synthesizer, CORDIC

Lowest Cost Embedded Processing Solution

Xilinx offers complete range of processing IP solutions – ranging from the PicoBlaze 8-bit microcontroller to the high-end MicroBlaze 32-bit processor. This range of processing solutions lets you create high-performance, low-cost embedded systems for a wide range of applications in Spartan™-3 FPGAs.

To support processor-centric designs, Xilinx also offers a complete range of peripheral IP cores such as GPIO, Timer/Counter, UART 16450/16550, EMAC 10/100 and IIC. These allow you to customize your processor-based systems.

Low Cost Memory Controller Reference Designs

Xilinx provides free reference designs to help you interface to most popular DDR SDRAM memory from Micron, Samsung, and other companies. Xilinx provides a tool called the Memory Interface Generator (MIG) that allows users to quickly generate a HDL description of the kind of memory controller required for their application. Application notes now available on Memory Corner at: www.xilinx.com/products/design_resources/mem_corner/index.htm, describe the controller implementation in the silicon fabric.

Optimized For the World's Lowest Cost FPGA Family

With over 100 million units shipped, Spartan is the world's most popular low-cost FPGA architecture. With every generation of the Spartan architecture, Xilinx has delivered more logic and I/O at a lower price. The reason why Spartan-3 IP is so effective at reducing cost is the availability of embedded features such as:

Spartan-3 Feature For Lower Costs	Benefits
Shift Register Logic Functionality (SRL16)	Efficient pipelining and FIFO implementation. Reduces area used by multi-channel DSP functions.
Embedded Multipliers	Optimization of DSP IP cores such as FIR filters, Up and Down Converters
Distributed RAM	Efficient implementation of simple state machines and microcontrollers
18KB Block RAM	Ideal for memory intensive designs

IP Cores for Spartan-3 Speed Your System Design

Easy to Use IP Tools

Most IP is available in the ISE™ tools and accessible through the CORE Generator™ tool. The CORE Generator tool delivers a library of parameterizable and fixed netlist LogiCORE IP cores with the corresponding data sheets all designed and supported by Xilinx. For the latest updates visit Xilinx IP locator at www.xilinx.com/ipcenter today.

Simple Licensing Process

Xilinx and IP providers from around the world have combined efforts to form the Common License Consortium. The outcome is the simplification of the FPGA IP licensing process. Together, each company has agreed to license their IP cores to FPGA customers under a common set of terms known as the SignOnce IP License.



Evaluate before you buy

Before licensing an IP core, designers can download and evaluate them, free of charge, to ensure the cores meet their functionality requirements. To evaluate your IP, visit Xilinx IP locator at www.xilinx.com/ipcenter today.

Support

Xilinx provides world-class support for all Xilinx products, including IP cores. Visit www.xilinx.com/support for Documentation, Software Updates, Answers Database, and information on how to contact Xilinx Technical Support.

Quick Search with IP Locator

The Xilinx IP locator is the most comprehensive resource for intellectual property (IP) cores and development boards available from Xilinx and our third party partners. The advanced search feature allows quick and easy search based on functions (e.g., Bus Interface), sub function (e.g., PCI, Ethernet MAC), Xilinx devices and vendors. Visit www.xilinx.com/ipcenter for the most comprehensive set of IP available from Xilinx and partners.

The screenshot shows the Xilinx IP Locator interface. The search results for the Tri-Mode Ethernet Media Access Controller (TEMAC) IP core are displayed. The page includes a navigation menu, a search bar, and a detailed description of the IP core. The description highlights that the TEMAC core is designed for high-density digital Ethernet communications and storage equipment. It supports various Ethernet standards and offers a complete and highly flexible solution for the implementation of Ethernet Link and Physical layers. The page also lists device family support, software requirements, and product details.

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