CAST is your best independent source for third-party IP cores and subsystems. With CAST IP, you don’t have to pay royalties, buy IP from EDA or silicon vendors, use the same non-differentiating IP as everyone else, or settle for compromises in reusability or quality.

**Competitive IP Product Line**

Our proven line of ASIC and FPGA IP cores features:
- 32-bit processors that are extremely competitive in both performance and system-energy savings;
- Proven, easy to program, area- and power-saving 8051 microcontrollers;
- Lossless data compression with latency so low it can work on internal datapaths;
- H.264 video compression with amazing quality and transmission efficiency for streaming video;
- The widest-available choice of high-quality JPEG and JPEG 2000 image compression; and
- The interconnects, peripherals, security, and other functions needed to build complete systems.

**Proven IP Partner**

CAST has over twenty years focused on IP and our 8051 sales and support teams are the most experienced in the industry. Count on us to help you choose the best products and licensing for your specific needs, and to stick with you through the successful completion of your project.

**Ready-to-Use Deliverables**

CAST IP products are available in synthesizable code source for ASICs or as netlists for FPGAs. Deliverables include everything needed for successful development: documentation, scripts, testbenches, and more.

**IP Cores and Subsystems for SoCs in ASICs & FPGAs**

CAST IP products are available in synthesizable code source for ASICs or as netlists for FPGAs. Deliverables include everything needed for successful development: documentation, scripts, testbenches, and more.

**Controllers & Processors**

- **BA2x™ 32-bit Processors**
  - Application Processors
  - BA25 Full
  - BA22-AP Basic
  - BA22-CE Embedded
  - BA22-DE Deeply Embedded
  - BA21 Low-Power Deeply Embedded
  - BA20 PipelineZero™ Embedded
  - AMBA AHB/APB & AXI
  - Development IDE, tools, & boards
  - 8/16-bit Microcontrollers
    - S8051XC3 super fast, advanced
    - T8051XC3 tiny, fast
    - R8051XC2 fast, mature
    - L8051XC1 legacy-configurable
    - S80251 super-fast 16-bit

**Compression**

- **Lossless Data Compression**
  - GZIP/ZLIB/Deflate Compressor
  - GUNZIP/ZLIB/Inflate Decompressor

- **H.264/AVC**
  - Encoders: High, Main, & Baseline Profiles; Low-Latency Option
  - Intra Video Decoder
  - Hardware RTP Stack for H.264
  - Application Platform, Video Over IP

- **JPEG 2000**
  - Encoder, J2K Platform

**Security & Encryption**

- **AES**
  - AES programmable Encrypt & Decrypt
  - AES optimized 32-, 128-bit data path
  - AES GCM

- **DES**
  - DES Single, DES Triple

**Other Processors**

- MD5, SHA-1, SHA-256

**Interconnects**

- **DisplayPort**
  - Transmitter, Receiver

- **Ethernet MAC**
  - 1G eMAC Controller

- **PCI Express**
  - PCI Express Endpoint Controllers: X1/X4, X8, PCIe Application Interface

- **PCI**
  - PCI Target, Master & Host Bridges

- **CAN**
  - 2.0 Controller/FC Controller

- **I2C**
  - Master, Slave

- **LIN**
  - LIN Controller

- **SPI**
  - Master/Slave, Quad

**Peripherals**

- **Device Controllers**
  - Smart Card Reader

- **NOR Flash Controllers**
  - Serial/SPI, Parallel

- **Network Stacks**
  - 1G/10G UDP/IP, Hardware RTP, MPEG Transport Stream Encapsulator

- **Data Link Controllers**
  - SDLC, HDLC

- **AMBA Infrastructure**
  - AMBA, AHB 32-bit DMA

**Legacy Peripherals**

- DMA Controllers: 8237, 82380
- UARTs: 16450S, 16550S, & 16750S
- Timer/Counter: 8254