

## Your Best IP Partner

Founded in 1993, CAST continues to thrive as the longest-running—and most experienced—independent IP supplier. Our years of work to perfect IP reuse, improve IP quality standards, and refine sales and business practices yield a product line and a partner that offer unique benefits for you today and in the future.

### Simple, Flexible Licensing

We help you get to work quickly, with fine-tuned project options and licensing terms that ensure smooth legal sign-off. Most CAST IP is available royalty-free, and extremely cost-effective.

### Application Area Experts for the Best IP Possible

Our experienced internal engineering team develops cores, subsystems, and reference designs. We also cultivate enduring relationships with technology experts around the world, and work with them to give you the very best IP in every application area we cover.

### The Most Experienced IP Sales and Support Team

The sales and support pros within CAST have helped customers choose and successfully deploy IP for over twenty years. Together with our regional sales partners, we make sure you have an excellent IP experience, from your first consideration of what core you might need through IP integration and testing and on to the successful completion and shipping of your finished product.

### Find Out More

See how you can start benefitting from CAST IP today. Review extensive product info on our website, then contact Sales to get started.



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# CAST

## Silicon IP Cores

Low-power 8- and 32-bit processors for embedded applications



Lossless compression for data-heavy systems; Unmatched image & video IP



Automotive and industrial interfaces, leading-edge through conventional



Peripheral device controllers and pre-integrated AMBA® subsystems for rapid design



System-level security and cryptographic functions for essential product protection



## Delivering Silicon IP for Over 25 Years

CAST focuses completely on silicon intellectual property. We develop, aggregate, and support digital IP, delivering proven products that save system designers time and money.

### Diverse IP Offerings

Our product line can satisfy many of your IP requirements, ranging from leading-edge new cores through reliable standards-based functions. These are available in synthesizable RTL for ASICs, or as netlists targeting popular FPGAs and structured ASICs.

### Easy to Use and Integrate

CAST IP is designed from the start to be easy to use and straightforward to integrate and verify.

Deliverables include high-quality code, documentation, and development aids like simulation models, test cases, and processor debug interfaces and IDEs.

Reference designs simplify pre-sales evaluation, and Verification IP (VIP) is available for many cores.

### Proven, Low-Risk Products

Our quality standards are high, and all our IP undergoes extreme testing before it gets to you. We conduct rigorous internal testing, participate in industry collaboration plugfests, partner with popular semiconductor companies, and more to ensure proper functioning and smooth integration. Our practices have been extremely tested and proven, as we have helped thousands of customers ship billions of units in hundreds of application areas.



### BA2x™ 32-BIT PROCESSORS

#### Application Processors

- 7/12-Stage Out of Order Completion
- 5-Stage In-Order, Basic

#### Embedded Processors

- 5-Stage Cache-Enabled
- Deeply Embedded: 4/5-Stage, 2-Stage Low-Power, 1-Stage PipelineZero™

IDE, Debug Key, Eval Kit, Boards

### 8051-COMPATIBLE MICROCONTROLLERS

#### 8-bit 8051s

- Super-Fast, Advanced
- Fast, Tiny
- Fast, Mature
- Legacy-Configurable

#### 16-bit 80251s

- Super-Fast
- Tiny

Debug Key, Eval Kit, Boards

### Outstanding Support

CAST IP comes with some of the best customer support in the industry. Our goal is to help make you successful, not just sell you IP, and we have the experience and resources to make that happen.



### GZIP LOSSLESS DATA COMPRESSION

GZIP/ZLIB/Deflate Compressor

GUNZIP/ZLIB/Inflate Decompressor

#### GZIP Reference Designs

- Intel FPGA Board
- Xilinx FPGA Board



### AVC & HEVC VIDEO COMPRESSION

#### H.264/AVC Encoders

- Low-Power through High-Performance
- Scalable 1080p & UHD/4K-8K
- Intra-Only options

#### H.264/AVC Baseline Decoders

- Low-Latency & Low-Power

#### H.265/HEVC Decoder

#### Platforms & Companion Cores

- Video Over IP Encoder & Decoder
- RTP Stacks for H.264 Encapsulation

### JPEG & JPEG-LS IMAGE COMPRESSION

#### JPEG-LS Lossless Compression

- Encoder & Decoder

#### JPEG Encoders & Decoders

- Low-Power, Extended, Ultra-Fast

#### Platforms & Companion Cores

- JPEG RTP Hardware Stack
- Motion JPEG over IP Subsystem

### INTERFACES

#### Automotive Bus Controllers

- CAN 2.0/FD/XL: Controller, VIP
- SENT and LIN
- TSN Ethernet: Endpoint & Switched Endpoint Controllers, VIP
- CAN to TSN Gateway

#### IP Stacks

- UDP/IP: 100G, 40/50G, 10/25G, 1G
- Ethernet MACs: 1G, Low-Latency

#### MIPI Controllers

- SPMI Master or Slave Controller

#### PCI Interfaces

- Target, Master & Host Bridges

### PERIPHERALS

#### Serial Communications

- Single, Dual, Quad and Octal SPI
- I2C/SMBUS, UARTs, HDLC/SDLC

#### Memory Controllers

- Universal Serial/SPI FLASH
- Cache, SRAM, DMA

#### Other Peripherals

- Smart Card Reader
- Timers, RTC, GPIO, UART

#### AMBA® Subsystems

- AHB & AXI Multi-layer Interconnect
- Bridges to APB



### SECURITY

#### SoC Security

- GEON Secure BA2x Processor
- GEON-SoC Hardware Root of Trust: Secure Boot, Firmware Encryption, Secure Debug, HSM

#### Encryption Primitives

- Keccak/SHA-3, SHA-256, MD5
- AES: programable, XTS, CCM, GCM Key Expander