

Easy to Use and Integrate

CAST IP is designed 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, processor debug interfaces, and IDEs. Reference designs simplify pre-sales evaluation and provide a head start for system development.

Proven, Low-Risk Products

Our quality standards are high, and all our IP undergoes extreme testing before it reaches you. We conduct rigorous internal testing, participate in industry collaboration plugfests, and partner with popular FPGA and semiconductor companies to ensure proper functioning and smooth integration.

Our practices have been tested and proven over time, as we have helped numerous defense contractors successfully complete hundreds of programs.

The Most Experienced IP Sales and Support Team

The sales and support professionals within CAST have helped customers choose and successfully deploy IP for nearly thirty years. We make sure you have an excellent IP experience from your first consideration of what core you need through the successful completion and shipping of your finished product.



Find Out More

[Get in touch](#) to learn more about how the IP cores from CAST have given many other defense and aerospace developers a competitive edge and how we might do the same for you.

www.cast-inc.com

info@cast-inc.com

1 201.391.8300

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IP Cores for Mission- Critical Systems

CAST

ASIC & FPGA IP CORES READY FOR MISSION- CRITICAL SYSTEMS

CAST is a trusted provider of digital IP cores that developers use to build mission-critical systems for defense, aerospace, vehicular, industrial, and other applications.

Operating Since 1993

Over 30 years, CAST has built a reputation for providing *A Better IP Experience* to hundreds of organizations shipping billions of product units:

- We deliver high-quality, reliable, and easy-to-use IP, and
- It is backed by some of the best technical support in the industry.



Our many defense and aerospace customers have satisfied hundreds of design contracts using encryption, CAN

& TSN, UDP/IP, eMACs, video compression, lossless & lossy image compression, HDLC/SDLC, microcontrollers, MIPI, memory controllers, PCI, and other cores from CAST.

All support relevant industry standards, use popular system interfaces, and are packaged for easy integration and testing.

Expert guidance before the sale helps you choose the very best IP for the goals and constraints of your particular project.

PROCESSORS

RISC-V Processors

- Ultra-Low-Power, 2 Pipeline Stages
- Low-Power, Fast, 5 Pipeline Stages
- Dual Lockstep or TMR, 5 pipeline stages

8051 MCUs

- Super-Fast, Tiny, Legacy, more
- Debug Key, Eval Kit, Boards

COMMUNICATION

Gigabit Ethernet MACs

- Ultra-Low-Latency
- With SG-DMA & PTP Support
- MACsec Protocol Engine

IP Stacks

- Hardware TCP/IP, 1G to 100G
- Hardware UDP/IP, 1G to 100G

TSN Ethernet

- Switch, Endpoints

CAN Bus Controller

- CAN 2.0/FD/XL/TTCAN: CANsec

HDLC & SDLC Controller

- HDLC/SDLC: DO-254/DAL-A option

Reference design boards and complete functioning subsystems help you evaluate the IP in your own environment and can provide a shortcut to full system development.

Headquartered in New Jersey, CAST is ISO 9001:2015 certified and has ISO 27001 certification underway. We support industry standards such as ISO 26262 and DO-254, and offer competitive pricing and flexible, royalty-free licensing.



COMPRESSION

Data

- GZIP/ZLIB/Deflate Compression & Decompression Cores

Video

- H.264/AVC Encoders & Decoders
- H.264 over IP Subsystems
- Platforms & Companion Cores

Lossless Image

- JPEG-LS Encoder & Decoder
- PNG Encoder & Decoder
- QOI Encoder & Decoder

Lossy Image

- JPEG Encoders & Decoders
- MJPEG over IP Subsystems

SECURITY

SoC Security

- GEON Secure BA2x Processor
- GEON-SoC Hardware Root of Trust

Encryption Primitives

- ASCON Lightweight Encryption
- AES: CCM, GCM, XTS, KEXP
- Keccak/SHA-3, SHA-256, MD5

ADDITIONAL IP CORES

- SENT & LIN Controllers
- MIPI Controllers
- PCI Interfaces
- xSPI/HyperBus/Xccela/PSRAM Memory Controllers
- Audio Interfaces
- Smart Card Reader
- Bus Fabrics & DMAs
- Misc. Peripherals & Platforms



SERVICES

- IP Integration
- Reference Design Development
- Functional Safety Enhancements of Existing IP Cores
- ISO 26262 & DO-254 CDPs

A BETTER IP EXPERIENCE SINCE 1996

CAST focuses entirely on silicon intellectual property. We develop, aggregate, and support digital IP, delivering proven products that help system designers develop better products while saving time and money.

Diverse IP Offerings

Our product line can satisfy many of your IP requirements, as it ranges from leading-edge new cores to reliable standards-based functions.

These IP cores are available in synthesizable RTL for ASICs or as netlists targeting popular FPGAs.



Most CAST IP is available royalty-free and is extremely cost-effective, with simple, flexible licensing terms that fit your project, ensure smooth legal sign-off, and help you get to work quickly.