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 multiple application areas.

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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CAST IP Cores
for ASICs & FPGAs

- RISC-V & other 8-bit to 32-bit embedded processors
- Automotive, Functional Safety & other interfaces
- Data, Image & Video Compression
- Networking & Communications
- SoC Security & Crypto Primitives
- Audio, memory, serial & other peripheral device controllers

All with

A Better IP Experience

- High-quality, low-risk products
- Flexible licensing, including royalty-free
- Industry-leading support

CAST

A BETTER IP EXPERIENCE

Founded in 1993, CAST focuses entirely 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 to reliable standards-based functions. These are available as synthesizable RTL for ASICs or netlists optimized for all popular FPGAs.

Easy to Use and Integrate

CAST IP is 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 gets to you. We conduct rigorous internal testing, participate in industry collaboration plugfests, and partner with popular semiconductor companies to ensure proper functioning and smooth integration.

Our practices have been tested and proven over time, as we have helped thousands of customers ship billions of units in hundreds of application areas.

RISC-V Processors

BA51 32-bit Ultra-Low-Power
- Deeply embedded, 2-stage pipeline

BA53 32-bit Low-Power, Fast
- Embedded, 5-stage pipeline

EMSA5-FS 32-bit, Functional Safety
- ASIL D Ready

BA2x™ 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 Microcontrollers

R8051XC2 Fast & Configurable

T8051XC3 Ultra-Small

L8051XC1 Legacy

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 you succeed, not just sell you IP, and we have the experience and resources to make that happen.

Interfaces

Automotive Bus Controllers
- CAN 2.0/FD/XL/TTCAN: Controller & VIP; CANsec
- TSN Ethernet: Endpoint, Switch, Switched Endpoint
- SENT and LIN
- SafeSPI M/S/Monitor/Bridge
- 10BASE-T1S and 100BASE-T1

Audio Interfaces
- ASRC -Audio Sample Rate Converter
- I2S-TDM Multichannel Transceiver

IP Stacks
- 1G to 100G UDP/IP and TCP/IP
- eMACs: 1G, Low-Latency, SPE
- MACsec Protocol Engine

MIPI Controllers
- I3C Basic Secondary Controller
- I3C Basic Improved Target
- SPMI Controller/Target; I3C Target

PCI Interfaces
- Target, Master & Host Bridges

Peripherals

Serial Communications
- I2C-SPI M/S
- SPI M/S: Single, Dual, Quad & Octal
- SPI to AHB Bridge
- HDLC/SDLC: DO-254/DAL-A option
- I2C/SMBUS; UARTs

Memory Controllers
- xSPI, HyperBus, Xccela, PSRAM
- Cache, SRAM, ECC

Other Peripherals:
Smart Card Reader, DMAs, Timers, Real-Time Clock, GPIO

AMBA® Subsystems
- AHB & AXI Multi-layer Interconnect
- Bridges to APB

Lossless Data Compression

LZ4/Snappy Decompressor

GZIP/ZLIB/Deflate
- Compressor & Decompressor

Lossless Image Compression

QOI Quite Okay Image format
- Encoder & Decoder

PNG Encoder & Decoder

JPEG-LS Encoder & Decoder

JPEG Image Compression

JPEG Encoders & Decoders
- Low-Power, Extended, Ultra-Fast

Subsystems
- RTP Hardware Stack for JPEG
- Motion JPEG over IP Subsystem

Video Compression

H.264/AVC Encoders
- Low-Power to High-Performance
- Scalable 1080p & UHD/4K–8K
- Intra-Only options

H.264/AVC Baseline Decoders
- Low-Latency & Low-Power

Platforms & Companion Cores

Security

GEON™ SoC Security
- GEON-SBoot SoC Secure Boot
- GEON-SoC Hardware Root of Trust
- GEON Secure BA2x Processor

Crypto Primitives
- PQC KEM Quantum Key Exchange
- SNOW-V Stream Cipher Engine
- ASCON Lightweight Encryption
- AES: CCM, GCM, XTS, KEXP
- Keccak/SHA-3, SHA-256, MD5