InspireSemi™

Access Breakthrough Compute Performance

InspireSemi is an Austin-based chip design company that has built a technology foundation that delivers revolutionary performance, energy efficiency, versatility, and a thriving open software ecosystem. This enables us to address multiple diversified, uncorrelated markets of High-Performance Computing (HPC), AI, and blockchain.

OVERVIEW

New standards of speed, efficiency, and versatility

Existing HPC, AI, Graph Analytics & blockchain compute solutions are no longer "good enough". They are expensive, hard to program, power hungry, and only work for limited applications. InspireSemi is poised to set new standards of speed, versatility, and efficiency for engineering/scientific/finance, AI, and blockchain applications. Led by an accomplished team with a proven track record, and with the successful experience of our first ASIC platform, we are currently developing the next generation accelerated computing solution.

Technology

Our versatile Thunderbird "supercomputer cluster-on-a-chip" accelerator architecture contains thousands of modern, efficient, and powerful 64-bit CPU cores, connected via our high speed mesh network fabric. It is compatible with an established, thriving open software ecosystem to support broader range of applications than GPUs. Our meticulous design and proprietary power and cooling systems enable market-leading energy efficiency.

MARKETS

Scientists and engineers can open new frontiers with blistering speed, hyperscalable interconnectivity, energy efficiency, & standard CPU programming model that eliminates vendor lock-in.

AI Developers can unleash their AI and graph analytics applications from data and performance bottlenecks and undue expense to accelerate innovation, insights, and market impact.

Blockchain operators and cryptocurrency miners can maximize their profitability, with greater versatility than a GPU and the energy efficiency of a dedicated ASIC for several popular algorithms.

Alex Gray, Founder, CTO & President

Alex is the founder of InspireSemi and inventor of its processor architecture. He is a versatile technical leader skilled in many areas of electronic design and other disciplines. He previously founded CryptoCore Technologies and several small businesses. He has over a decade of design experience with companies including SunPower & SolarBridge Technologies.

Ron Van Dell, Chief Executive Officer

Ron has over 40 years of experience and an exceptional track record of success and proven leadership skills in early-stage, turn-around and established businesses. He is former CEO of Primarion, SolarBridge, and several other semiconductor and hardware startups. He has deep experience in organization design and operational leadership, business strategy, fundraising/M&A, and corporate governance.

John B. Kennedy, Chief Financial Officer

John has over 30 years of experience in finance and administration, with a strong focus in venture-backed startup and growth stage companies. Most recently he served as CFO of TriLumina, a leading illumination solution technology company. Prior to TriLumina John was CFO of Sprocket Media, Inc. and SolarBridge Technologies, Inc.

Trevor Smith, VP Engineering

Trevor has over 30 years hands on experience leading multiple IC design teams as VP of Engineering with a solid track record of getting enterprise silicon solutions into production. He has founded several successful startups, including Ross Technology, which delivered SPARC CPU products and had a successful IPO. He also led teams at ServerEngines, Tanvas, Everspin, and Motorola Semiconductor.

Doug Norton, VP Business Development

Doug has over 35 years of experience in business development, marketing & sales of HPC, AI and enterprise IT solutions. He brings a customer-focused approach to OEM, channel, & technology partnerships, and building worldwide sales teams. He began his career at IBM, going on to various leadership positions at Cadence Design Systems, CoWare, Newisys, Virtual Instruments & Nimbix.

Thomas Fedorko, VP Operations

Thomas is an entrepreneurial executive bringing more than 35 years of hands-on technical and business leadership in semiconductor Operations. He began his career as a product engineer at Motorola Semiconductor who delivered the first microprocessor for the Apple Macintosh and went on to lead Operations teams for several successful startup companies including Eta Compute, Uhnder, Bluetechnix & Luminary Micro.

Find out more: info@inspiresemi | inspiresemi.com

InspireSemi™

SOLUTIONS

Setting new standards of compute power, energy efficiency and flexibility for a range of applications

InspireSemi's powerful Thunderbird "supercomputer cluster-on-a-chip" accelerator architecture is based on an array of thousands of modern, efficient, and powerful 64-bit CPU cores, tightly integrated with high-speed memory and networking. It is an ideal platform for high-performance computing (HPC), AI/machine learning, graph analytics, and ultra-efficient blockchain applications.

Leveraging the modern, efficient, open-source RISC-V CPU instruction set architecture (ISA) provides access to an established, thriving ecosystem of open-source software and development tools. The developer-friendly all-CPU programming model eliminates vendor lock-in and greatly simplifies software development and QA since there is no need to support multiple software stacks (e.g.- x86, CUDA, ROCM, OpenCL, etc.). This also enables the combination of HPC & AI on one platform for deeper insights and bigger advancements.

Our highly optimized, proprietary on-chip mesh network provides extreme bandwidth and low latency communications between cores. Tightly integrated with the high-performance cores and distributed memory, it removes crucial bottlenecks from applications that depend on close cooperation between many independent threads. Arrays of hundreds of chips – up to one million processor cores – connect seamlessly via high-speed serial transceivers.

Compared to a modern datacenter GPU, our architecture provides all the raw computational power with far broader application to real world codes. Our advanced network fabric enables far better cooperation between cores. And our roots in extremely power- and cost-sensitive blockchain computing enable us to provide this performance with considerably lower energy consumption and cost than leading GPU's.

10X throughput
30-60% power reduction
Existing software ecosystem
60-75% below competitors' pricing

- **Thousands of powerful RISC-V CPU cores & established, thriving software ecosystem to support broader range of applications than GPUs**
- **Developer-friendly programming model greatly simplifies software & algorithm development, eliminates vendor lock-in, and provides maximum versatility for HPC, AI, and blockchain applications**
- **Superscalar, vector, and tensor operations**
- **Dedicated acceleration for several blockchain algorithms**
- **Ample high-speed SRAM memory tightly integrated with processor cores**
- **Extreme-bandwidth, low-latency, on-chip mesh network fabric for both inter- and intra-chip connectivity**
- **Support for seamless many-chip arrays up to a million cores via high-speed SerDes links**
- **Support for large amounts of onboard DDR DRAM, SSD storage, PCIe, and Gb ethernet**

RISC-V®

Innovate with InspireSemi
Contact us to learn more

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