InspireSemi™

Thunderbird™

Disruptive Next Generation HPC-AI Accelerated Computing Platform

Company Overview

March 2026

InspireSemi at a glance

- Fabless semiconductor startup based in Austin, TX
- Experienced, accomplished leadership team
- World class partners: design, supply chain, go-to-market
- Delivering breakthrough computation power and radically enhanced energy efficiency to solve real world problems for multiple high growth industries
- Thunderbird “Supercomputer cluster-on-a-chip” achieved functional first silicon
- Business model enables rapid production ramp to profitability with modest market penetration
- Recognized global partners to deliver turnkey solutions across multiple markets and geographies

RISC-V® cadence®

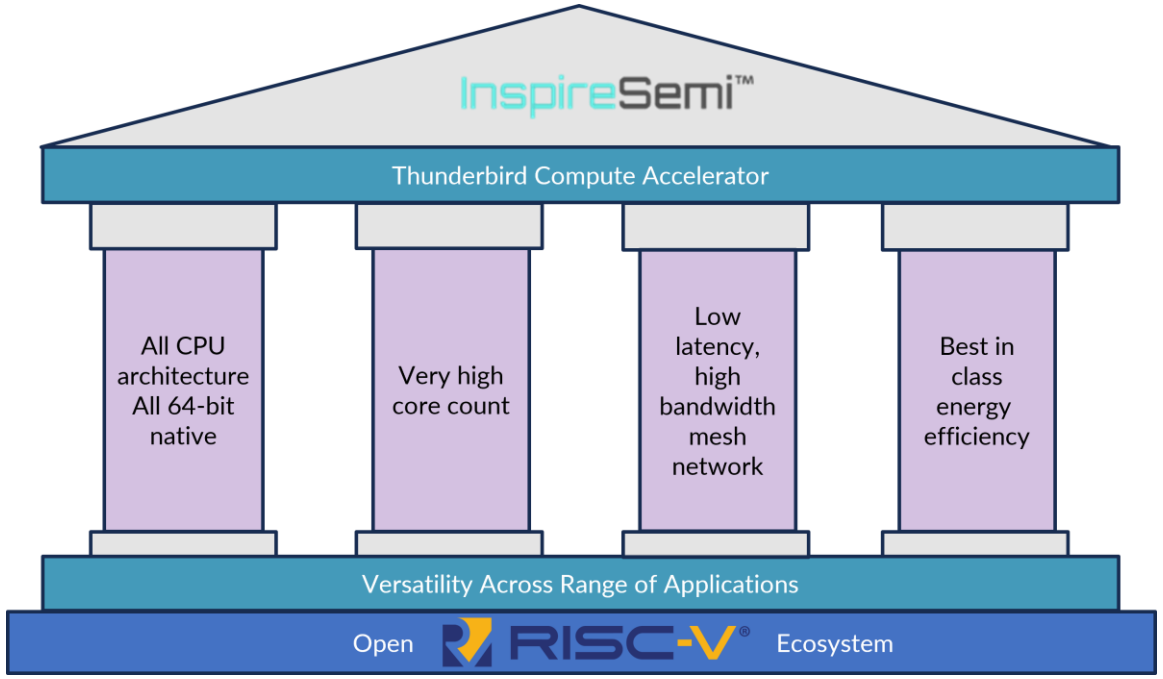
tsmc ASE GROUP imec

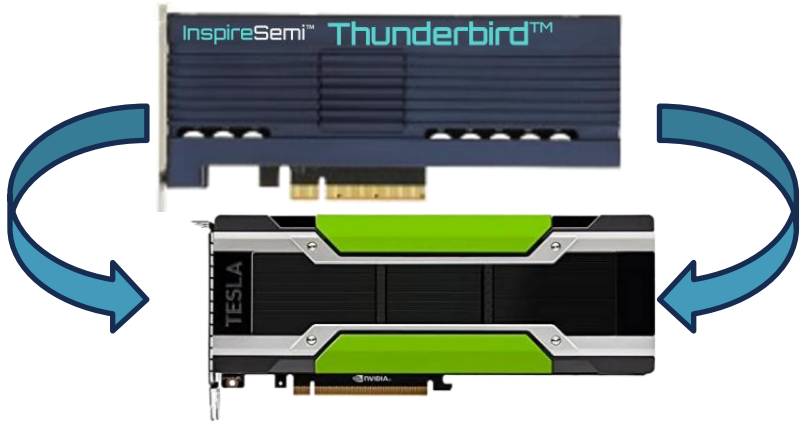
Lenovo PENGUIN COMPUTING A subsidiary of SMART Global Holdings, Inc. World Wide Technology

POWERED BY DELL Technologies SUPERMICRO E4 COMPUTER ENGINEERING

Accelerating the $500B datacenter HPC-AI market

Providing the "ground truth" for AI in science & engineering





- Versatile all-CPU architecture applicable to ***all*** HPC-AI software, much of which does not benefit from GPUs
- High precision, high performance, low power 64-bit native processors to solve "big math" problems required by most HPC software

- Thunderbird runs the highly accurate physics-based HPC simulations needed to train AI surrogate models for science and engineering
- GPUs run fast AI surrogate models to approximate long-running physics-based HPC simulations

Thunderbird datacenter impact:

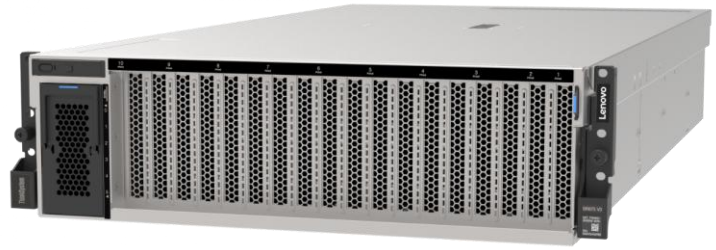
Significant datacenter TCO savings and carbon footprint reduction

One Thunderbird board has more CPU cores than an ***entire rack of standard Intel or AMD servers!***

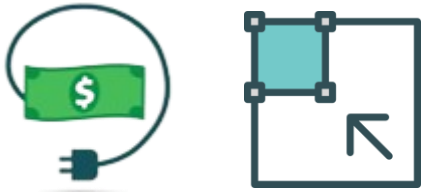
- Less cost: real estate, servers, networking, power, cooling
- Less complexity, interconnects, points of failure

Thunderbird has **>20X** CPU cores vs. Intel or AMD server chips

- Intel and AMD CPUs: Up to 256 general purpose x86 cores per server board
- Thunderbird: 6,144 high-performance/low-power RISC-V cores per add-in board (all 64-bit)



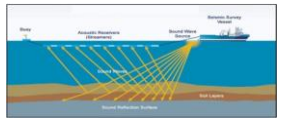
3U Server with 8 Thunderbird cards



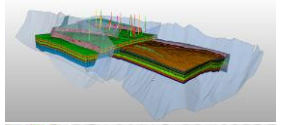
Addressing the need to accelerate All HPC-AI software

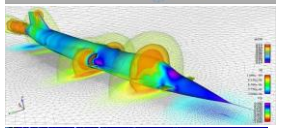
What customers always wanted…not "yet another GPU"

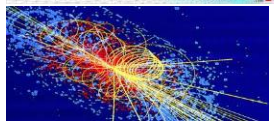

Financial simulations

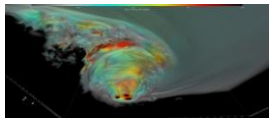

Geology: Seismic


Financial Trading & Graph Analytics

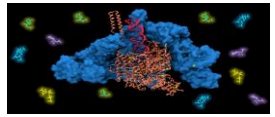

Energy: Reservoir Modeling & Sim


CAE/Computational Fluid Dynamics

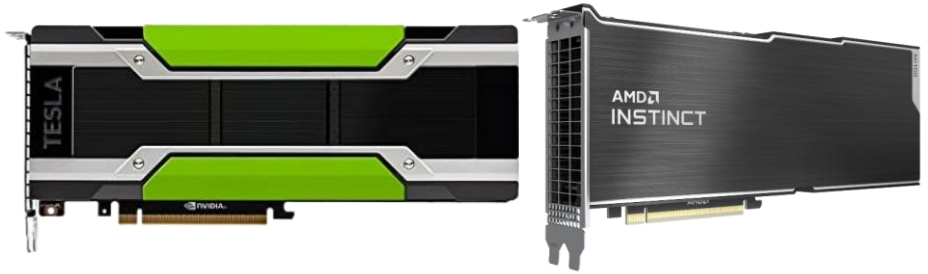

Government Lab Simulations


Climate & Weather Modeling


Cybersecurity & Cryptography


Genomics, Pharma, Life Sciences

Datacenter GPUs primarily focused on AI



InspireSemi Thunderbird

Highly differentiated "supercomputer-cluster-on-a-chip"

- Versatile platform delivers unprecedented capability
- 4 chip PCIe card delivers >6,000 64-bit CPU cores (FP64)
- Innovative high-bandwidth, low-latency on-chip network
- Best-in-class for both Performance/$ and Watt
- Large scale computing power with much lower TCO - can replace many racks of servers and expensive high-speed networking

Sample Thunderbird customer & analyst feedback

BERKELEY LAB

"High-precision calculations are vital for generating reliable scientific data, which serves as the foundation for large language models. These include biomedical research, drug design, medical devices, climate change research, and applications that require deep simulation and modeling."
- Kathy Yelick, Associate Lab Director for Computing Sciences Lawrence Berkeley National Laboratory (LBNL)

Argonne NATIONAL LABORATORY

"Double precision calculations are crucial for AI in science and engineering to ensure AI surrogate models are accurate and not hallucinating. The need for physics-based models is not going away soon."
- Charles Edward Catlett, Senior Computer Scientist

World Wide Technology

"With the momentum of AI and the convergence of AI and HPC, it is time to look outside the status quo and leverage a new technology base, like InspireSemi's Thunderbird product line. Thunderbird is ideal for workflows that require the highest performance and lowest power. It is easy to integrate, making it a valuable addition to the HPC and AI industry."
- Earl J. Dodd, Global HPC Business Practice Leader

Intersect360 RESEARCH

"The pursuit of AI has been a tremendous boon for high-performance architectures across the board. For pure AI investments, most of the attention is on GPUs, but many organizations are seeking a more versatile solution, built on processing elements that are suited to a variety of HPC, AI, and analytics workloads. This is where we see a market opportunity for companies like InspireSemi with its Thunderbird platform."
- Adison Snell, CEO

InspireSemi Thunderbird in the News

techradar.

Supercomputer-on-a-chip goes live: single PCIe card packs more than 6,000 RISC-V cores, with the ability to scale to more than 360,000 cores

- InspireSemi has announced the successful tapeout of the Thunderbird I Accelerated Computing chip for fabrication at TSMC

tom's HARDWARE

Thunderbird packs up to 6,144 CPU cores into a single AI accelerator and scales up to 360,000 cores — InspireSemi's RISC-V 'supercomputer-cluster-on-a-chip' touts higher performance than Nvidia GPUs

- The Holy Grail of supercomputing chip design is an architecture that combines the versatility and programmability of CPUs with the explicit parallelism of GPUs, and InspireSemi strives to achieve just that

TECHSPOT

Move over GPUs, with 1,536 cores the Thunderbird RISC-V CPU is ready to eat your lunch

- Open source enables small industries to participate in the accelerator boom

ALL ABOUT CIRCUITS

InspireSemi Announces Tapeout of Thunderbird Accelerated Computing Chip

- InspireSemi's new compute chip couples the parallel processing of GPUs with the versatility of CPUs

JPR Jon Peddie Research

InspireSemi announces tape-out of RISC-V HPC chip

- InspireSemi's Thunderbird I RISC-V chip offers high-performance computing for underserved applications, with an emphasis on energy efficiency and competitive pricing

Open software ecosystem solves customer porting challenges

- Supports standard operating systems (unlike competing compute accelerators)
  - **Linux!** provides access to existing HPC/AI software ecosystem
  - Plus Zephyr and FreeRTOS (Real-Time Operating Systems)
  - Eliminates need to learn and use proprietary software stacks
  - Eliminates vendor lock-in
- Also supports OpenMP offload model
- Uses standard CPU-style programming models
  - No need for CUDA, ROCM, etc. that GPUs require
  - No need for disruptive software algorithm rewrites
  - Standard compiler, OpenMP, MPI, etc. approaches
- Leverages key RISC-V software ecosystem
  - Address-accurate QEMU model
  - Standard compilers, e.g.- GCC, Gfortran, GDB toolchains
  - Standard HPC libraries, e.g. – BLAS, LAPACK, FFTW

Thunderbird addresses ALL HPC-AI customer needs

Disrupting on everything that matters

	InspireSemi Thunderbird	CPU - Servers	GPU Accelerators	AI Accelerators	FPGA
Architecture	MIMD - Many Cores Many programs, many data streams	MIMD - Few Cores Few programs, few data streams	SIMD – Many Cores Few programs, many data streams	Single program, many data streams	Programmable logic elements
Performance	High for broad range of HPC apps	Slow, need h/w accelerators	High for AI and some HPC apps	High for AI only	Medium
Energy consumption	Low ~50W/chip (150W max)	High 650W+/chip (+ many servers)	Very High ~1400W+	High ~600W to Very High 20kW	Med ~300W
Scalability	256 chips	1-4 chips/server	2-8 chips	Varies	1 chip
Cost & Complexity	Low: one PCIe card vs. full rack of connected servers	High: many servers, InfiniBand, switches, cables, cooling …	Med to High: depends on vendor, form factor	Med to $Millions: depends on vendor, form factor	Med $8K-$10K
Programming model	Standard CPU-like, Any language, Full instruction set	Standard CPU, Any language, Full instruction set	Specialized C variant (CUDA, ROCM, SYCL)	Proprietary, obscure	Hardware description language (Verilog)
Software ecosystem	Open-source, Linux, compilers, libraries, AI frameworks, existing applications	Robust	Limited, proprietary	AI frameworks and proprietary software stacks	None

Accomplished Leadership Team

Alexander Gray, Founder, President & CTO

- 20 years experience in tech startups, entrepreneurship
- CryptoCore, SolarBridge, SunPower
- Holds 9 patents
- BSEE, University of Illinois at Urbana-Champaign

SolarBridge Technologies SUNPOWER

James Hickman, Chairman & CEO

- 25+ year extensive business and investment career
- Has been CEO of multiple startups
- Was investor #1 in InspireSemi
- Former US Army intelligence officer
- BS Mathematics & Computer Science, US Military Academy at West Point
- MS Accounting & Information Management, University of Texas at Dallas

Jack Cartwright, CFO

- 20+ years experience in tech startups and public companies
- Datum, Spruce Services, BT Global, Atkins Global, Cisco
- Former US Army Logistics & Operations officer
- MBA, University of Texas; MS Accounting, University of Miami

DATUM spruce BT ATKINS Member of the SNC-Lavalin Group CISCO

Thomas Fedorko, COO

- 35+ years hands-on technical and business leadership in semiconductor operations in both large IDM and startups
- Eta Compute, Uhnder, Bluetechnix, Black Sand (Qualcomm), Luminary Micro (TI), Oak Technology, Motorola SPS
- Technical degree from DeVry University and graduate of the Motorola Management Institute

Eta Compute UHNDER Qualcomm Black Sand Technologies
Texas Instruments LUMINARY MICRO OAK MOTOROLA

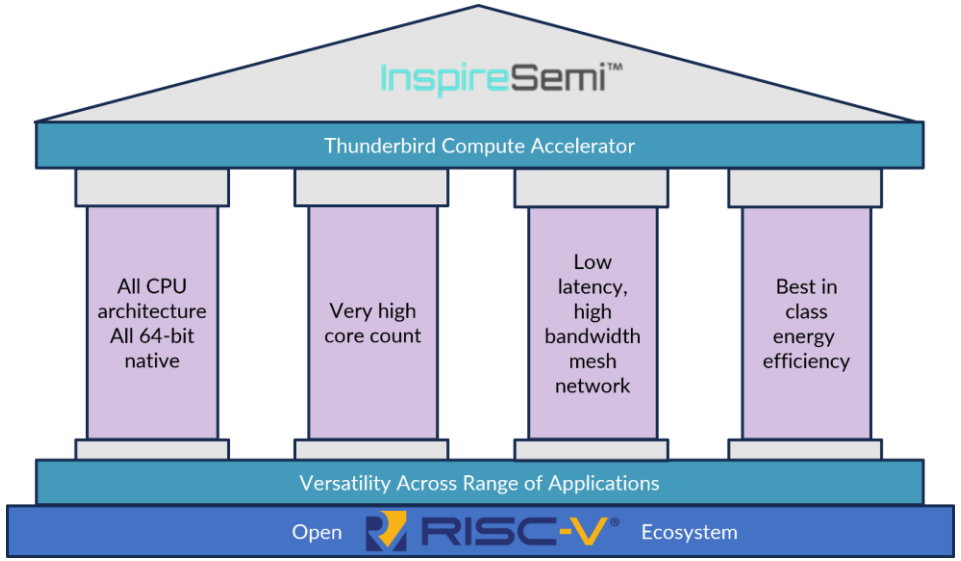
Doug Norton, CMO

- 35+ years experience; enterprise, startups, Federal
- Viviota, Nimbix, TMT, Virtana, Newisys, CoWare (Synopsys), Cadence, IBM
- President of The HPC-AI Society, Mentor at UT ATI (Austin Technology Incubator at University of Texas)
- RISC-V International: member HPC-SIG & Marketing team
- BSEE, Missouri University of Science & Technology

viviota NIMBIX tmy Texas Multicore Technologies, Inc. virtana
NEWISYS CoWare cadence IBM

World class team driving breakthrough solutions

- Delivering breakthrough computation power and radically enhanced efficiency to solve real world problems
- Thunderbird “supercomputer cluster-on-a-chip” architecture well positioned to attack multiple high growth market verticals
- Versatile, high precision, manycore CPU accelerated computing platform provides the “ground truth” the AI industry needs to solve real problems
- Supports the key role GPUs play for AI training and inferencing
- Recognized global partners to deliver turnkey solutions across multiple markets and geographies



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