COMPUTE & AI

Garmo-Sparsity-ACC

AI Compute — format-agnostic sparse tensor accelerator

IP-2070 · Evaluation package · Evaluation / IP scope

Function and architecture

- 2:4, 4:8, arbitrary N:M, CSR, CSC, COO and block-sparse formats
- Metadata-first fetch prevents zero payload traffic
- Hardware gather/scatter, prefix sum, compaction and decompression

Integration summary

Garmo-Sparsity-ACC integration role: AI Compute — format-agnostic sparse tensor accelerator. Documented composition: 2:4, 4:8, arbitrary N:M, CSR, CSC, COO and block-sparse formats; Metadata-first fetch prevents zero payload traffic; Hardware gather/scatter, prefix sum, compaction and decompression.

Technical record

Canonical identity	IP-2070
Responsibility	AI Compute — format-agnostic sparse tensor accelerator
Documented interface architecture	AXI4 512-bit, sparse descriptor stream, dense tensor stream, completion queue
Documented building blocks	2:4, 4:8, arbitrary N:M, CSR, CSC, COO and block-sparse formats; Metadata-first fetch prevents zero payload traffic; Hardware gather/scatter, prefix sum, compaction and decompression
Delivery boundary	Evaluation / IP scope
Evidence scope	Evaluation package
Architecture targets · not measurements	131,072 candidate MAC positions/cycle, 1.5 GHz target; >85% utilization at 90% sparsity.

Delivery and release binding

- Interface version and parameter set
- Clock/reset domains and integration constraints
- Companion memory, PHY and software requirements
- Verification collateral and acceptance criteria

Confirm for the selected release: Node/library binding, Clock/reset limits, Physical and protocol dependencies, Artifact hashes, Acceptance criteria.

Evidence and qualification

Canonical technology and its architecture/integration role are recorded. The offered delivery is confirmed against the exact release before licensing.

No node-port, silicon-performance, standards certification or analog qualification is inherited from a related product.

Canonical status: P1 / REPRESENTATIVE ARCHITECTURE RTL — concrete integration specification and synthesizable RTL shell/representative datapath only; all frequency, throughput, power, area, jitter and standards-superiority figures remain architecture targets until the required evidence hierarchy closes.

Evaluation and licensing

Evaluation: Evaluate an individual IP configuration. Production: Named-design production license. Custom work: Node binding or derivative integration. Rights, pricing, support and acceptance criteria are agreed for the exact scope.

Contact: patrick@garmolabs.com | Product path: /ip/garmo-sparsity-acc