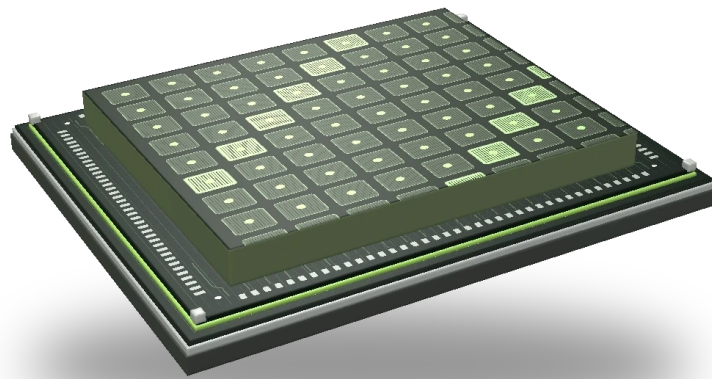


GLASS-S4K

A stochastic compute fabric for sampling and combinatorial optimization, with tiled spin-state engines and programmable local and remote interactions.



Architectural concept. Not a die photograph, physical layout or measured device.

IP-4759 · Source + model · RTL + reference models

Function and architecture

- 4,096 digital spin states across 64 tiles
- Eight replica-state contexts
- Programmable local and remote signed couplings
- Host CSR, configuration DMA and command sequencing

Integration summary

The S4K hierarchy connects its tiled replica fabric to the shared GLASS SoC and portable digital chip top. Local and remote coupling resources define the optimization landscape. Target-PDK pads, clocks, memories and package implementation remain separate physical integration work.

Technical record

Canonical identity	IP-4759
Responsibility	A stochastic compute fabric for sampling and combinatorial optimization, with tiled spin-state engines and programmable local and remote interactions.
Delivery boundary	RTL + reference models
Evidence scope	Source + model

Delivery and release binding

- Exact SoC/top and configuration
- Clock, reset, power and pad contract
- Memory, PHY and package dependencies
- Release-specific PVT and signoff views

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

Evidence and qualification

Bible v7.42 §140 records a 14/14 reference/hierarchy campaign, mathematical consistency checks and SKU addressability tests. The source hierarchy is recorded; HDL compilation, synthesis and physical signoff were not executed in that release environment.

The spin and replica counts describe the digital source configuration, not fabricated capacity, measured speed or guaranteed solution quality. Arbitrary all-replica tempering exchange is not claimed complete. Physical qualification remains release-specific.

Canonical status: SOURCE IMPLEMENTED / REFERENCE + STATIC-HIERARCHY EVIDENCE / HDL-CAD CLOSURE PENDING

Source basis: Bible v7.42 VERIFIED V29, §140.5–140.12; IP-4759 glass_s4k_soc; pages 1230–1234

Evaluation and licensing

Evaluation: Architecture and release evaluation. Production: Chip / SoC licensing program. Custom work: Custom silicon integration. Rights, pricing, support and acceptance criteria are agreed for the exact scope.

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