FABRIC & CONNECTIVITY

Garmo-Ethernet-TSN

Time-sensitive Ethernet control, queueing and scheduling architecture.

IP-2087 · Evaluation package · Evaluation / IP scope

Function and architecture

- 802.1AS/1588 timestamp engine, 802.1Qbv time-aware shaper
- Frame preemption, per-stream filtering/policing, replication/elimination hooks
- 1024-entry gate-control list per port with nanosecond timebase

Integration summary

Garmo-Ethernet-TSN integration role: Networking — multi-rate 25GbE TSN MAC/PCS subsystem. Documented composition: 802.1AS/1588 timestamp engine, 802.1Qbv time-aware shaper; Frame preemption, per-stream filtering/policing, replication/elimination hooks; 1024-entry gate-control list per port with nanosecond timebase.

Technical record

Canonical identity	IP-2087
Responsibility	Networking — multi-rate 25GbE TSN MAC/PCS subsystem
Documented interface architecture	XGMII/25G PCS boundary, AXI-stream packet fabric, PTP clock, CSR, DMA
Documented building blocks	802.1AS/1588 timestamp engine, 802.1Qbv time-aware shaper; Frame preemption, per-stream filtering/policing, replication/elimination hooks; 1024-entry gate-control list per port with nanosecond timebase
Delivery boundary	Evaluation / IP scope
Evidence scope	Evaluation package
Architecture targets · not measurements	4 × 1/2.5/5/10/25 GbE ports; 100 Gb/s aggregate; <1 us scheduled-path internal latency target.

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: P0 / 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.

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