INTERFACES & MIXED-SIGNAL

Garmo-CAN-FD-CTL

Automotive CAN controller architecture for message processing, timing and host integration.

IP-2086 · Evaluation package · Evaluation / IP scope

Function and architecture

- ISO 11898-1:2024 architectural target for Classical/FD/FD-light/XL personalities
- Cut-through DMA, descriptor queues and zero-copy receive
- Hardware timestamping and schedule/deadline filters

Integration summary

Garmo-CAN-FD-CTL integration role: Automotive I/O — CAN XL / CAN FD / Classical CAN controller. Documented composition: ISO 11898-1:2024 architectural target for Classical/FD/FD-light/XL personalities; Cut-through DMA, descriptor queues and zero-copy receive; Hardware timestamping and schedule/deadline filters.

Technical record

Canonical identity	IP-2086
Responsibility	Automotive I/O — CAN XL / CAN FD / Classical CAN controller
Documented interface architecture	CAN transceiver bit interface, AXI/APB, DMA, timestamp/PTP bridge, IRQ
Documented building blocks	ISO 11898-1:2024 architectural target for Classical/FD/FD-light/XL personalities; Cut-through DMA, descriptor queues and zero-copy receive; Hardware timestamping and schedule/deadline filters
Delivery boundary	Evaluation / IP scope
Evidence scope	Evaluation package
Architecture targets · not measurements	CAN XL to 20 Mb/s, payload to 2048 B, CAN FD light commander, 64 hardware queues.

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.

Control/model IP does not establish analog PHY, electrical, RF or standards compliance. Qualified third-party or foundry collateral may be required.

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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