Chronos Tech LLC

7310 Miramar Rd. #410, San Diego, CA 92109

Multi-Gigabit Fully Digital SerDes IP for Security

Chronos Digital SerDes is a high-performance, low-power and highly scalable SerDes PHY that supports all leading ARM AMBA or RISCV standards, such as AXI, ACE, CHI, TileLink (or custom variation of those) and is fully deployable by standard digital tools and flows.
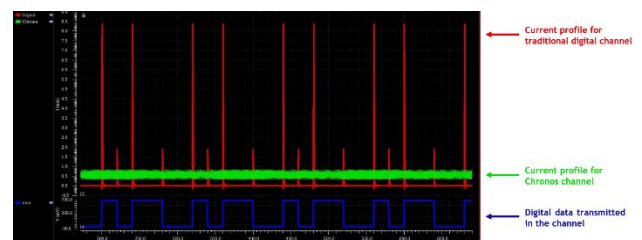
Features

- **Digital Low-Latency Communication**
  Safe and secure digital encoding with low EMI profile and high throughput
- **Clockless Serialization**
  End-to-end protocol compatibility while enabling link width reduction. No high-speed clocks, PLL or DLL needed.
- **Soft IP**
  Deployable by standard Digital tools and flows. No Analog blocks. Fully customizable. Automated netlist and constraints generation.
- **Embedded on-Die Telemetry**
  Performance and margin measurement available on a sub-channel base.
- **Design Space**
  Data Center/HPC, Automotive, Cloud AI, 3D-Interconnect (Hybrid Bonding TSV), Edge.

Benefits

- **Performance**
  Best in Class end-to-end latency, (700ps/mm*). Low Power (0.05 pJ/bit/mm*, no Analog signaling), Scalable (not limited in distance). Bus width reduction up to 86%. Silicon Proven.
- **Resiliency**
  Resilient to PVT. Designed for WC, but operates on TYP. Safe and Secure (low EMI, protected against DPA Attacks)
- **Ease of Use**
  Easier timing closure. Insensitive to clock degradation. Standard Sign-off methodology. Automated deployment within standard tools.
- **Unmatched Testability**
  Patented on-Die telemetry for on-chip measurement and tuning. Enables Power reduction.

Use Case: Reliability & Security

- PVT Resilient:
  - Clock Jitter Insensitive
  - No hold-time failure
  - Easy Voltage domain crossing
- Low EMI
- Protected against DPA attacks **.

Current profile for traditional digital channel

Current profile for Chronos channel

Digital data transmitted in the channel

* Based on 7nm TSMC Silicon
** Riscure lab test pending

About Chronos Tech LLC:
We are US based company developing game changing IPs to enable next-generation intelligent System-on-Chips (SoCs) targeting a wide range of applications, from cloud computing and AI to mobile and automotive.
https://www.chronostech.com