



## Chronos Tech LLC

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

### Multi-Gigabit Fully Digital SerDes IP for 3D-IC

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

#### Features

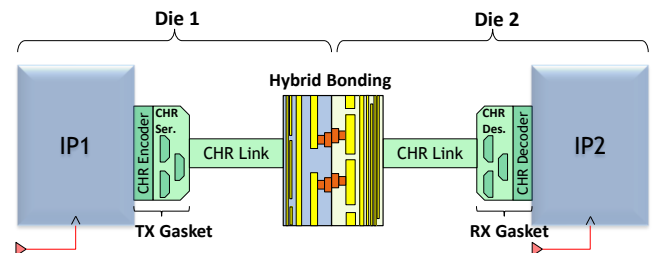
- **Digital Low-Latency Communication**  
Safe and secure digital encoding with low EMI profile and high throughput
- **Clockless Serialization**  
End-to-end protocol compatibility while enabling link width reduction. No high-speed clocks, PLL or DLL needed.
- **Soft IP**  
Deployable by standard Digital 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: 3D-IC Hybrid Bonding

- PVT resilient (Ideal for connecting dies from different technologies/ process skews)
- No Multi-Die STA needed.
- Soft-IP deployable by standard tools
- Low Power.
- On-chip test capability pre and post bond.



#### 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>



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\* Based on 7nm TSMC Silicon