

IEEE 1588 Timing Synchronization Solution

Best-in-Class PTP Synchronization

IEEE 1588v2 Compliant

Meets Class D ITU-T G.8273.2



SiTime's IEEE 1588 timing synchronization solution combines SiTime's MEMS precision timing with a complete IEEE 1588 software to deliver an environmentally resilient, accurate timing synchronization solution. SiTime's IEEE 1588 timing synchronization offering is ideal for industrial applications operating in harsh environments, in addition to other applications such as 5G radio, data centers and next gen automotive. This platform agnostic, bundled solution offers a plug and play option for engineering teams, eliminating the need for costly software development and accelerating time to revenue.

Accurate and reliable time synchronization is vital for the smooth operation and security of infrastructure and industry. Even for teams with domain expertise, designing a custom solution from scratch is a complex and time-consuming process. The IEEE 1588 synchronization solution is an easy to implement, end-to-end option backed by SiTime's commitment to customer support.





SiTime PTP Stack Architecture, Hardware Support, & Libraries



PTP Hardware Support

- Access to hardware time stamps
- Access to local clock
 - Adjustment
 - Read clock value
- Access to extended clock features (frequency generation, events)
- Dedicated / enhanced driver



ITU-T G.8372.2 Specifications

T-BC/T-TSC Class	Max TE (ns)	Notes
A	100 ns	
В	70 ns	
С	30 ns	
D	5 ns	SiTime Solution @ <5 ns (unfiltered)

Timing Sync. for NIC



IEEE 1588 Servo | Hosted in Customer SOC

SiTime Collaboration with Customer

SiTime

Timing Specification	Class A	Class B	Class C	Class D	
Time Error Noise Generation (Wander-Free PTP & SyncE)		PASS			
Maximum absolute TE (max TE) – all unfiltered components		PASS	PASS	NA	
Maximum absolute TE LPF (max TEL)		NA	NA	PASS	
Constant TE Noise Generation (cTE)		PASS	PASS	NA	
Dynamic TE LPF Noise Generation (dTEL)		PASS	PASS	PASS	
Noise Tolerance		PASS	PASS	NA	
Noise Transfer		PASS			



SiTime is a leader in MEMS timing solutions. We combine innovative MEMS and programmable analog technologies with our systems expertise to deliver industry-best timing solutions that overcome the limitations of traditional quartz products. Our configurable products enable customers to differentiate their systems with higher performance, small size, and better reliability.