



# TimeFabric™ Holdover Extension

## Scalable 24-Hour Holdover for Reliable Network Synchronization

Up to 24 hours of holdover with no hardware modifications to SiT5811

2X longer holdover extensions on all SiTime OCXO and TCXO platforms

Platform agnostic, scalable software solution



Holdover is essential for maintaining accurate timing during GNSS signal loss or reference clock failure. Without reliable holdover, networked systems risk desynchronization, dropped packets, and degraded service. Infrastructure such as centralized units in 5G RAN, datacenter time servers, and core routers require local oscillators with long-duration stability to ensure uninterrupted operation. The SiTime TimeFabric™ Holdover Extension delivers a scalable, software-driven approach that extends holdover performance up to 24 hours—without increasing size, power consumption, or hardware complexity.

### Benefits

- Maintains synchronization during GNSS or PTP outages for up to 24 hours
- Supports service continuity across multi-node infrastructure
- Avoids costly redesigns by extending holdover without hardware upgrades
- Improves reliability in temperature- and airflow-sensitive environments
- Accelerates deployment with a software-driven upgrade path

### Applications

- Datacenter switches, NICs, and primary reference time servers
- 5G centralized units (CUs) and distributed units (DUs)
- Core and edge routers in carrier and enterprise networks
- Industrial automation, robotics, and edge computing systems
- Aerospace and defense timing subsystems requiring local holdover

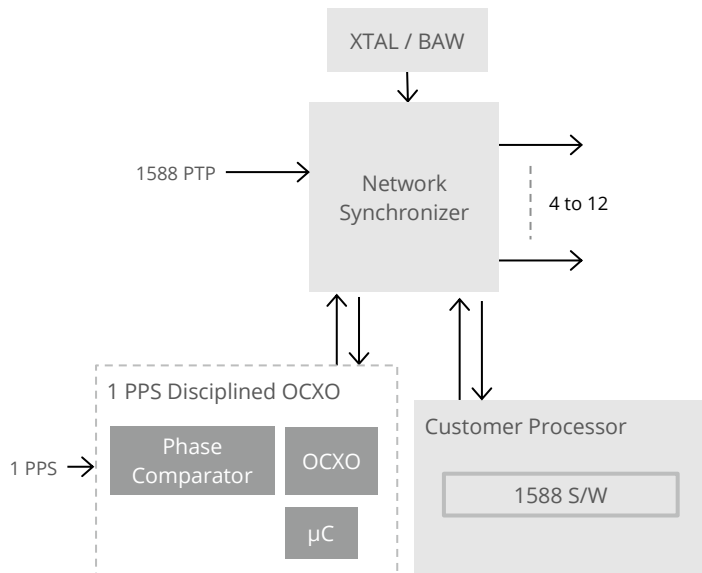
### Features

- Software-enabled 24-hour holdover under real-world operating conditions
- Adaptive drift compensation via I<sup>2</sup>C digital interface
- $\pm 1.5 \mu\text{s}$  time error over extended (24-hour) holdover
- $\pm 0.01 \text{ ppb}/^\circ\text{C}$  frequency slope ensures industrial-range temperature stability
- Provides  $5\text{E-}14$  frequency pull resolution for precise compensation
- $0.01 \text{ ppb/day}$  aging;  $4\text{E-}12 \text{ HDEV}$  at 10-second averaging time
- No activity dips or microjumps; stable under dynamic environmental conditions
- Support for existing [SiT5811](#)/[SiT5812](#) (Epoch OCXOs) and [SiT7101](#) (Endura Epoch OCXO)
- Feature support to be available on all SiTime OCXO and TCXO platforms

## Reliable Sync With Industry Leading Holdover – 25X Smaller, 3X Lower Power

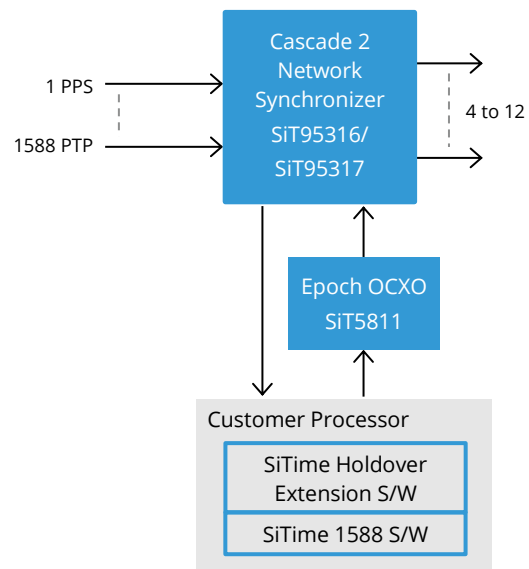
### Legacy Holdover Solution

Large and power hungry 1PPSDO  
External XTAL/BAW



### SiTime Holdover Solution

OCXO 25X less volume and 3X lower power  
No XTAL/BAW



### Compatible Hardware Platforms

TimeFabric™ Holdover Extension works with the following SiTime components:

[SiT5811](#) | [SiT5812](#) | [SiT7101](#) Epoch OCXO

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