



# IEEE 1588 Blades for the TimeHub

## IEEE 1588-2008 (PTP) Grandmaster Server Blades

### KEY FEATURES

- Carrier-Class IEEE 1588-2008 Grandmaster
- Telecom Profile with Unicast Support
- Supports 125 Clients per Blade (Scalable to >1000 per shelf)
- Interoperable with 3rd-Party PTP Clients
- Bookend Solution with TimeProvider 500 PTP Translator
- TL1 and CLI Management
- NEBS Level 3 Certified

### KEY BENEFITS

- Precise Timing and Synchronization over Ethernet
- Enables Rapid Migration to Ethernet Backhaul
- Full Hardware Redundancy Protects Client Clocks from Potential Service Outages
- Superior Precision and Accuracy Protected by the TimeHub System
- Scalable Form Factor Allows for Ease of Expansion with Network Growth
- Proven Interoperability with a Wide Range of IEEE 1588-2008 Clients
- Complete End-to-End PTP Solution with Advanced Monitoring and Management Support

### Carrier Class IEEE 1588 Blades

Carriers have long relied on the Building Integrated Timing Supply to meet all physical layer synchronization requirements with five-nines availability. With the introduction of high-performance IEEE 1588 Precision Time Protocol (PTP) Grandmaster Server Blades, the TimeHub platform can now deliver carrier class PTP to meet demanding NGN packet timing requirements. IEEE 1588 Blades for the TimeHub provide the performance, scale, availability and security to deliver carrier class synchronization to remote PTP clients over Ethernet networks.

Symmetricom's IEEE 1588 Blades are fully integrated into the TimeHub system. These cards can be installed as single servers or redundant pairs in any available master or expansion shelf output slot. PTP capacity scales

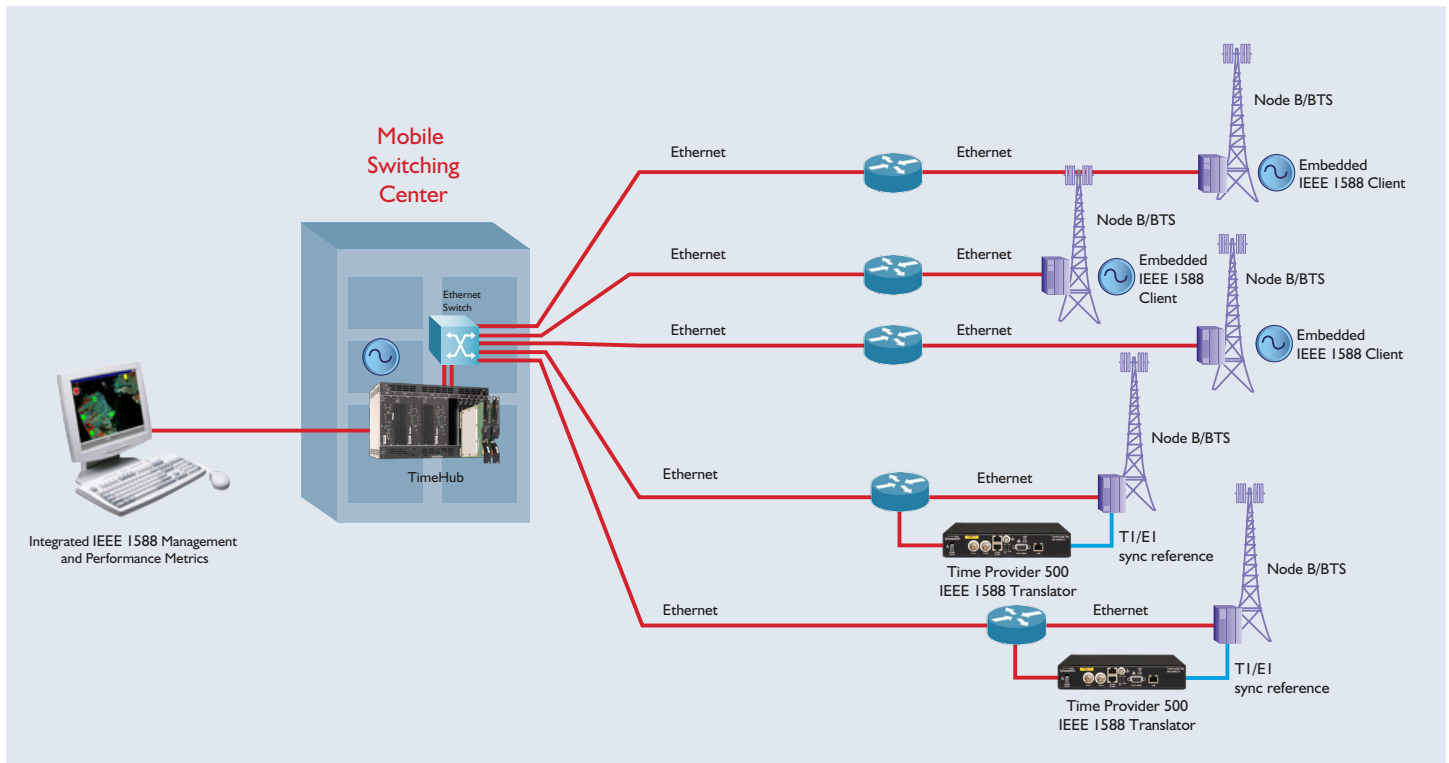
up at a rate of up to 125 full rate clients per card. Front-access IEEE 1588 traffic ports utilize Small Form-factor Pluggable (SFP) modules for flexibility to support 100 BaseT electrical or 1000Base-X optical or electrical interfaces. All configuration and management is consolidated through TimeHub system management ports to maintain security and isolation from IEEE 1588 ports.

The new IEEE 1588 Blades provide superior stability and protection through direct connection to the TimeHub system backplane. IEEE 1588 Blades operate either in ARB (arbitrary) timescale mode or in TAI (International Atomic Time) timescale with full UTC traceability through the direct connection to the TimeSource Primary Reference Source.



Symmetricom's IEEE 1588 Blades for the TimeHub can be installed as single servers or redundant pairs in any available master or expansion shelf output slots.





IEEE 1588 (PTP) Grandmaster Server Blades provide synchronization traceability over Ethernet to PTP client clocks in remote base stations.

## Specifications

### NETWORK PROTOCOL

- IEEE 1588-2008: Unicast with dynamic reservations (sec 16.1)
- IPv4 (annex D), IPv6 (future)

### PTP CAPACITY

- Up to 125 PTP clients at full rate per the IEEE 1588-2008 Telecom Profile

### SERVER PRECISION

- 10 ns rms typical (one-step, hardware timestamps)

### TIME SCALE SUPPORT

- TAI (International Atomic Time), TimeSource PRS required
- Arbitrary Time Scale

### INPUT REFERENCES

- Multiple PRS traceable synchronization reference inputs (user settable – refer to TimeHub specifications)

### PTP TRAFFIC PORT

- One Ethernet Small Form-factor Pluggable (SFP)
- Optical: 1000 Base-X
- Electrical: 100 Base-T, 1000 Base-T

### VLAN SUPPORT

- 4 VLANs (IEEE 802.1Q)

### PROTECTION

- 1:1 protection (full hardware redundancy)

### MANAGEMENT

- TL1 and CLI - Integrated into TimeHub system management (physical isolation from PTP traffic ports)

Please refer to TimeHub data sheet for full system specifications.

