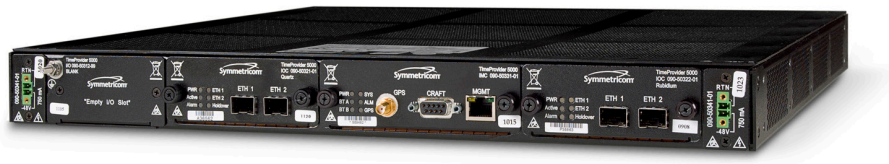
TimeProvider® 5000 NTP

Carrier Class NTP Server



Key Features

- Ultra high capacity NTP time server
- Stratum 1 operation via GPS
- Hardware-based time stamping and packet processing
- Redundant hardware: outputs, clock, power
- GigE with optical or electrical SFP
- CLI and SNMP Management

Key Benefits

- High precision time source for network synchronization
- Highly scalable and high performance network time server
- High reliability and time accuracy to meet mission critical SLAs

Applications

- Wireless Ethernet Backhaul synchronization (NTP-based client)
- Femtocell / LTE
- IP Multimedia Subsystem (IMS) services
- IPTV content and delivery
- IP SLA monitoring
- Digital Rights Management
- Logging and billing record management

Voice, video, data and mobile services are converging onto a common IP-based infrastructure. A carrier-class Network Time Protocol (NTP) server is a critical element in a packet infrastructure to ensure that networks scale efficiently and to assure the availability and performance levels needed. Carrier-class NTP helps to deliver a high quality of experience for all customers and supports Service Level Agreements (SLAs) for mission-critical services. Mobile network operators are deploying femtocell services to improve both coverage and capacity. To support the scale required an NTP server with ultra high capacity is critical to growing the network.

TimeProvider® 5000 NTP server is a carrier-class design that employs a high precision time engine and hardware redundancy to provide the scalability and performance required for rapidly evolving carrier networks.

The TimeProvider 5000 NTP server operates as a Stratum 1 server via GPS with quartz or rubidium holdover clocks. With these superior holdover capabilities the TimeProvider 5000 NTP can ensure continued operation with high quality timing when GPS is unavailable.

Hardware-based time stamping and packet processing enables the TimeProvider 5000 NTP server to provide superior nanoseconds timing accuracy for precise network synchronization that does not degrade as the number of clients grows.

The TimeProvider 5000 NTP server is available at two capacity levels. The basic model supports a rate of 20,000 transactions per second : suitable for telecommunications network applications and IP Multimedia Subsystem-enabled services. The TimeProvider 5000 NTP server is also available in an ultra high capacity version that supports up to 120,000 transactions per second. This configuration is ideal for femtocell deployments and other high capacity applications.

Hardware redundancy is essential to a carrier-class implementation to ensure network resiliency and service availability. TimeProvider 5000 NTP server has built-in power and clock redundancy to provide superior protection for reliability and availability: assuring network up-time and QoS.

TimeProvider 5000 NTP server can be managed remotely and locally via CLI or by SNMP.

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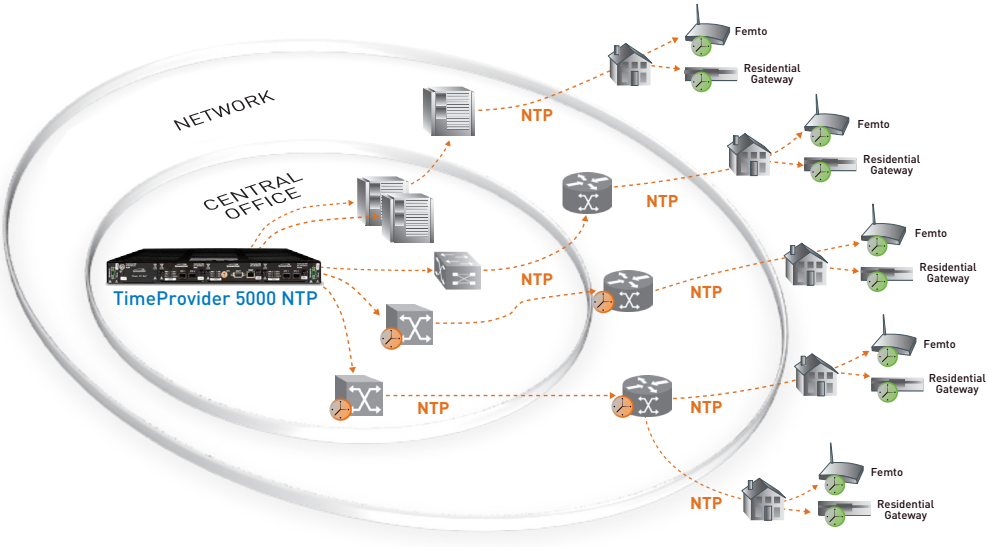

Femtocell networks are an application that requires the ultra high capacity and carrier grade performance of the TimeProvider 5000 NTP server.

Specifications

GPS INPUTS
- Stratum 1: GPS input
- 12 channel parallel tracking
- L1 band

OUTPUTS
- 2 x GigE output per IOC (optical and electrical)

PHYSICAL SPECIFICATIONS
- Dimensions: 44mm H x 483mm W x 435mm D (1.75" H x 19" W x 17" D)
- Weight: 4.4 kg (9.6 lbs)

POWER REQUIREMENTS
- -38.4 VDC to -75 VDC (dual redundant) @ 43W typical

ENVIRONMENTAL SPECIFICATIONS
- Operating temperature: -5°C to +45°C
- Storage temperature: -40°C to +70°C
- Humidity: 5% to 100% w/condensation

TIME STAMPING & PACKET PROCESSING
- Hardware time stamping engine
- Hardware packet processing for assured performance

HARDWARE MODULES
- IMC module, NTP
- IOC module, Quartz
- IOC module, Rubidium

FREQUENCY ACCURACY
- Tracking to GPS: PRS/PRC quality (1E-11)
- Holdover (over constant temperature):
  - Rubidium (G.812 type II) <1x10^{-11}/day
  - Quartz (G.812 type I) <1x10^{-10}/day

TIME ACCURACY
- Tracking to GPS: <100ns when locked to GPS
- Holdover (over constant temperature):
  - Rubidium (G.812 type II) 10 µsec over 5 days
  - Quartz (G.812 type I) 10 µsec over 1 day

OTHER SW LICENSE OPTIONS
- SNMP v2c, v3 license
- NTP server with 120,000 TPS license

TRANSACTION RATE
- Base capacity: Up to 20,000 transactions per second
- Ultra high capacity: Up to 120,000 transactions per second (optional) (Maintains 100ns accuracy at full transaction rate capacity when locked to GPS)

TIME STAMP PRECISION
- <10 ns rms typical

MANAGEMENT
- SNMP v2c, v3 (optional)
- CLI

PROTOCOLS
- NTPv4 w/unicast mode
- NTPv3 compatible
- IPv4
- VLAN
- DHCP
- Diff Serv/DSCP
- TELNET
- SYSLOG
- SFTP, FTP
- SSH
- RADIUS

CERTIFICATIONS
- CE certified
  - CISPR22
  - Safety – CB Scheme 60950-1 2nd edition
- EMC
  - FCC part 15 AS/NZS Class B, EN300 386, EN55022/24, CISPR22, KN55022/24
  - NEBS GR-1089 section 2 and 3
- ENVIRONMENTAL
  - ETSI (EN55022/EN55024) EN300019, Class T3.2
  - NEBS W/Exclusion of GR-63 4.2, 4.5
- Safety
  - UL/cUL 60950-1, IEC 60950-1/CB, EN60950-1 2nd edition
- RoHS
  - 6 of 6 RoHS

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