

# SecureSync® Enterprise

## Enterprise-class Network Time Server



- High bandwidth NTP performance
- Stratum 1 via GPS and other references or Stratum 2
- IEEE -1588 PTPv2 grandmaster option
- Modular hardware supports variety of interfaces and timing signals
- Multiple prioritized reference inputs
- Internal precision time-keeping via TCXO, OCXO or Rb atomic clock
- Secure web-based user interface
- Built-in network sync monitoring option
- Secure network management: enable or disable protocols
- IPv4/IPv6 dual stack
- Alert notifications via SNMP Traps and e-mail alerts
- CLI/SSH access for automation and scripting
- Industry-leading low phase noise capability
- GPS synchronization
- Multi-GNSS option (GLONASS, BeiDou, QZSS)
- Best-in-class 5-year warranty
- Service plans to ensure continuity of operations

SecureSync® combines Spectracom's precision master clock technology and secure network-centric approach with a compact modular hardware design in a 1RU chassis to bring you a powerful, scalable and flexible time server. It supports a wide variety of network synchronization and management protocols. The base model comes with a built-in 10/100 base-T Ethernet port for network management and high-performance NTP which can serve more than 7,500 NTP requests per second. It includes all the latest functions of NTPv4. It can be deployed in combination of other stratum-1 NTP server(s) and can be expanded through option modules.

### Options Modules Extend Synchronization Capability

A unique capability of SecureSync is to add hardware options at initial deployment or later as your network grows. An option adds three (3) 10/100/1000 interfaces to deliver NTP to multiple isolated LAN segments at 1 GigE. Two other options add PTPv2 functionality to the unit. One option is for a configurable master/slave PTP operation over a 10/100 network interface. The other is for PTP grandmaster functionality at 1 GigE. Up to six (6) of either types of ports can be added. Each PTP port is configured and operates independently to improve PTP performance since its processor is independent of all others in the system.

Along with precision 10 MHz and 1PPS outputs, all other physical synchronization signals can be generated as options so you can leverage your networking timing deployment to specific devices. Many of these signals can be used as references for redundancy or for other applications such as syncing across security boundaries via optical fiber.

### Reliability and Scalability Supports All Timing Network Architectures

Several features support reliability and redundancy. Multi-GNSS operation is available as an option to add GLONASS/BeiDou/QZSS signals to the GPS reference to improve signal availability. SecureSync can also be deployed without the expense of a GPS receiver to operate as a stratum-2 server. Units among the same stratum can be set as NTP peers. Any other timing source can also be a reference such as T1/E1, time code, 1PPS, etc. You set the priority from all the available references. An internal oscillator maintains timing accuracy if all references are lost. Choose from TCXO, 2 types of OCXO and Rubidium.

### A Network-centric Approach

SecureSync is a security-hardened network appliance designed to meet rigorous network security standards and best practices. It ensures tamper-proof management and extensive logging. Robust network protocols are used to allow for easy but secure configuration. Features can be enabled or disabled based on your network policies. Installation is aided by DHCP (IPv4), AUTOCONF (IPv6) or SLAAC, and a front-panel keypad and display, and a command-line interface. A modern web browser user interface supports configuration unit and an optional monitor of synchronization quality throughout the network.



Base units include 10 MHz and 1PPS output signals, network port, and choice of power, GPS reference, and internal oscillator options.

### Easy-to-use Interface

Most of the set-up and monitoring of the time server is via web browser interface. It is highly interactive with real-time status indicators and graphs to monitor and analyze trends. Its responsive design is mobile device friendly. Multi-language support is available.

### Network Monitoring

The web interface allows access to the TimeKeeper™ network sync monitoring function. TimeKeeper is a “time intelligence platform” that gathers data and calculates statistics from all the time clients on the network. It auto-discovers your time network topology and displays it for single-pane-of-glass enterprise management.

## Specifications

### Network Services

#### Timing

- NTP v2, v3, v4: Conforms with or exceeds RFC 1305 and 5905. Supports Unicast, Broadcast, Multicast, MD5 encryption, Peering, Stratum 2, Autokey
- SNTP v3, v4: Conforms with or exceeds RFC 1769, 2030, 4330, and 5905
- Time (RFC 868)
- Daytime (RFC 867)
- IEEE-1588v2 (PTP) via option card(s)
- NTP over Anycast

#### Management

- IPv4/IPv6: Dual stack
- DHCPv4/DHCPv6 (AUTOCONF)/SLAAC: Automatic IP address assignment
- LDAP: Authentication
- RADIUS: Authentication
- Syslog: Logging
- SNMP: Supports v1, v2c, and v3 (no auth/auth/priv) with Enterprise MIB

#### Communications

- HTTP: Browser-based configuration and monitoring
- Telnet: Remote configuration
- FTP Server: Access to files (logs, etc.)
- SMTP: Email

### Security Features

- Enable/Block Protocols
- Set SNMP Community Names and Network Access
- Password Protected
- Standard encryption/authentication protocols
- SSL Web-based Interface: SSL is used to secure HTTPS protocol to access configuration and status web pages
- SSH: SSL and data compression technologies provide a secure and efficient means to control, communicate with, and transfer data to or from the time server remotely
- SCP: securely transfers files to and from the time server over an SSH session
- SFTP: FTP replacement operates over an encrypted SSH transport
- SNMP v3: remotely configure and manage over an encrypted connection
- Alert notifications via SNMP Traps and e-mail

### GNSS Receiver

- Connector: Type N, +5V to power active antenna
- Frequency: GPS L1 (1575.42 MHz); optional Multi-GNSS: GLONASS L1 (1602.0 MHz), BeiDou B1 (1561.1 MHz), QZSS L1 (1575.42 MHz)
- Satellite tracking: 1 to 72, T-RAIM satellite error management
- Synchronization time: cold start < 15 minutes (includes almanac download), warm start < 5 minutes (assumes almanac download)
- Antenna system: sold separately

### Oscillator

	TCXO	OCXO	HP (LPN) OCXO	Rubidium
<b>Accuracy<sup>1</sup> to UTC</b> (1-sigma locked to GPS)	50 ns	50 ns	25 ns	25 ns
<b>Holdover Accuracy<sup>1</sup></b> (loss of GPS after 2 weeks locked, constant temp)				
After 4 hours	12 µs	1 µs	0.5 µs	0.2 µs
After 24 hours	450 µs	25 µs	10 µs	1 µs
Recommended max holdover for valid NTP server	1-2 days	30 days	75 days	2 years <sup>2</sup>

<sup>1</sup>Accuracy is measured by comparing the internal 1PPS with the GPS ontime point.

<sup>2</sup>Long holdover periods can risk missing a leap second.

### Time and Frequency Outputs

- 1PPS: TTL (5v p-p), into 50 ohm BNC
- 10 MHz: +13 dBm into 50 ohms, BNC (contact factory for performance specs)



Add the features you need through options modules, up to 6 option modules per unit

**Communications**

**Network Port**

- RJ-45, 10/100-baseT

**Serial Set-up Interface**

- RS-232 communications on DB-9 connector

**Front Panel**

- LED segments displays time
- Lockable keypad and configurable LCD display for network set-up
- Power/Status LEDs

**Power**

**Choice of**

- 100-240 VAC, 50/60 Hz, ±10% or 100-120 VAC, 400 Hz, ±10% from IEC60320 connector; power cord included
- 12-17 VDC, -15% to +20% or 21-60 VDC, -15% to +20%, secure locking device
- Auto-failover in the case of AC and DC

**Power Draw**

- TCXO: 40W normal (50W start-up)
- OCXO: 40W normal (50W start-up)
- Rb: 50W normal (80W start-up)

**Environmental**

	Operating	Storage	MIL-STD-810F
<b>Temperature</b>	-20 to +65°C (+55°C for Rb)	-40 to +85°C	501.4, 502.4
<b>Humidity</b>	0%-95% RH non-condensing @ 40°C		507.4
<b>Altitude</b>	100-240 VAC to 6,560 ft (2,000 M), 100-120 VAC to 13,123 ft (4,000 M) 12-17 VDC and 21-60 VDC to 13,123 ft (4,000 M)	45,000 ft (13,700 M)	500.4
<b>Shock</b>	15g, 11ms half sine wave	50g, 11ms half sine wave	516.5
<b>Vibration</b>	10-55Hz/0.07g <sup>2</sup> /Hz 55-500Hz/1.0g <sup>2</sup> /Hz	10-55Hz/0.15g <sup>2</sup> /Hz 55-500Hz/2.0g <sup>2</sup> /Hz	514.5

**Agency Approvals**

CE, UL, cUL, CSA, FCC part 15 class A, ROHS, WEEE

**Physical**

**Size/Weight**

- Designed for EIA 19" rack. 16.75" W x 1.72" H (1U) x 14.33" D actual (425 mm W x 44 mm H x 364 mm D actual)
- Weight: 6.5 lbs. (2.95 kg) with Rubidium option; 6.0 lbs. (2.72 kg) without
- Rack mount hardware included (assembly required)

**Warranty**

**Five Year Limited Warranty<sup>1</sup>**

- Oscillator for rubidium option is warranted for two years
- Extended warranty is available

<sup>1</sup>The warranty period may be dependent on country.

**Ordering Information**

**Base Units**

**1200-XYZ**

Select power, internal oscillator and GPS reference options:

X=Power	Y=Internal Oscillator	Z=Primary Reference
0=AC 1=AC/DC (12 vdc) 2=AC/DC (24/48 vdc) 3=DC (12 vdc) 4=DC (24/48 vdc)	0=TCXO 1=OCXO 2=High Performance (LPN)OCXO 3=Rubidium	1=No GNSS 3=GPS/Multi-GNSS <sup>1</sup>

**Example**

A SecureSync base unit with AC power, OCXO internal oscillator, and GPS as the primary reference is Model Number 1200-013. It comes with a 10/100 Base-T network port and 1 each 1PPS and 10 MHz output signals. Order option modules for additional input/output functions.

<sup>1</sup>Operation with Multi-GNSS requires SS OPT-GNS upgrade.

**Optional Upgrade**

**SS OPT-GNS:** Adds GLONASS L1, BeiDou B1, QZSS L1 (Not available with SAASM GPS)

**SS OPT-SKY:** Adds Skylight™ Indoor GPS Timing System

**Option Modules**

Up to 6 option modules can be accommodated per unit. See Option Module Card datasheet for details.