



NetClock®/GPS

Model 9283



- Stratum 1 NTP v2, v3, v4 Time Server
- Inputs include standard GPS or optional IRIG or modem
- Stratum 2 (up to 15) via NTP servers
- High bandwidth NTP performance
- Meets NENA PSAP Master Clock Standard #04-002
- Ideal for synchronizing 9-1-1 systems, computer networks, CAD, Radio, Voice Recorder, ANI/ALI, LAN/WAN, Clients, Servers and Wall Clocks
- IPv6
- NTP capabilities – Peering, Stratum 2, Autokey
- Supports centralized user authentication (LDAP, RADIUS)
- Supports centralized logging – Syslog
- Meets regulatory compliance standards including Sarbanes-Oxley, HIPAA, Gramm-Leach-Bliley and OATS
- Supports internal audits, including: audit trails, time stamping records, log files and data archiving
- Ethernet 10/100 Base-T
- Web-based user interface
- Remote diagnostics, flash upgrades, configuration, and control
- Automatic adjustment for local time, daylight saving time and leap second
- Security Features: SSL, SNMP v3, SSH, SCP, SFTP
- Free software updates
- 5-Year Limited Warranty

Today's computer systems rely on time-sensitive data for such tasks as logging emergency calls and synchronizing military operations. Reliable timing is equally critical for enterprises including healthcare and financial services. Spectracom's NetClock/GPS Model 9283 is ideally suited for delivering worldwide, split-second timing to mission critical systems. The 9283 features enhanced security, ease of management, and reliable operation. It is also the industry's first IPv6 Ready certified and tested time server.



Spectracom's security features ensure operational integrity and can be enabled or disabled based on your needs. These features include remote login and file transfer capabilities, providing the utmost security using industry standard interfaces.

The NetClock/GPS Model 9283 includes directory server support to authenticate users, external logging and monitoring of error messages through Syslog, convenient installation using DHCP, and dual stack network modernization using IPv4/IPv6.

Optional oven-stabilized crystal oscillators (OCXO) and Rubidium oscillators are available for extended timing. This improves timing reliability in the event that GPS reference is lost. Spectracom's optional modem can also provide GPS backup or function as a primary reference for disaster recovery. Multiple 9283 systems can be deployed together and peered to provide operational redundancy, creating yet another layer of dependability and reliability.

The 9283 uses a Commercial Off the Shelf (COTS) operating system and can track up to twelve GPS satellites simultaneously, providing highly accurate timing by synchronizing to a GPS or IRIG timing reference. Time code, alarm relay, and programmable timer outputs are standard and meet a wide array of customer needs.



PERFORMANCE

TYPICAL ACCURACY¹:

1PPS output ± 50 nanoseconds of UTC

RS-232/RS-485: Time code ± 100 microseconds to ± 1 millisecond of UTC, format dependent

IRIG B/E ± 20 microseconds to ± 200 microseconds of UTC, format dependent

Ethernet NTP: Output jitter within ± 50 microseconds relative to UTC typical

10 MHz/NTP

- TCXO: 1×10^{-10} typical 24-hour average locked to GPS/24-hour holdover (output dependent) unlocked
- OCXO: 1×10^{-11} typical 24-hour average locked to GPS, 2×10^{-8} per week typical aging/30 days holdover (output dependent) unlocked
- Rubidium: 1×10^{-12} typical 24-hour average locked to GPS, 1×10^{-11} per month typical aging/2-year holdover (output dependent) unlocked

¹ All output specifications are relative to GPS reference, unless noted otherwise.

OUTPUTS:

Type	Connector
Ethernet 10/100 Base-T	RJ45 (auto sensing)
Two RS-232 Serial Comm. ²	DB9 female
Two RS-485 Once-per-Second ²	3.81 mm Terminal Block
IRIG B/E AM/TTL	BNC
1PPS, Pulse Per Second	BNC
10 MHz Frequency Output	BNC
Alarm Outputs (up to 3)	3.81 mm Terminal Block
Programmable Timer Output (up to 3)	3.81 mm Terminal Block

² Serial time code formats: 0, 1, 2 (IBM Sysplex), 3, 4, 7, 8, 90 (GPS)

NETWORK PROTOCOLS:

- NTP v2, v3, v4: Conforms with or exceeds RFC 1305 and 4330. Supports Unicast, Broadcast, MD5 encryption, Peering, Stratum 2, Autokey
- HTTP: Browser-based configuration and monitoring
- Telnet: Remote configuration
- FTP Server: Access to logs
- SNMP: Supports v1, v2, v2c, and v3 (no auth/auth/priv) with Enterprise MIB
- IPv4/IPv6: Dual stack
- DHCP/DHCP6: Automatic IP address assignment
- LDAP: Authentication
- RADIUS: Authentication
- Syslog: Logging
- Time (RFC868)
- Daytime (RFC867)

SECURITY FEATURES:

- Enable/block protocols
- Set SNMP community names and network access
- Password protected
- SSL Web Based Interface: Web UI uses SSL to allow the use of the secure HTTPS protocol to access configuration and status web pages.
- SSH: utilizes SSL and data compression technologies to provide a secure and efficient means to control, communicate with, and transfer data to or from the master clock remotely.
- SCP: is used to securely transfer files to and from the time server over an SSH session.
- SFTP: is an FTP replacement that operates over an encrypted SSH transport.
- SNMPv3 (no auth/auth/priv): allows remote configuration and management over an encrypted connection.

INPUTS:

Type	Connector
RS-232 Serial Set-up Interface ³	DB9 female
GPS Antenna ⁴	Coaxial N type
Power	2.5mm male, center positive

³ Serial set-up interface configures network settings. The port works at 9600 baud, 8N1, and can be accessed with a PC terminal emulator.

⁴ Option 06 replaces antenna input with IRIG on BNC connector.

OPTIONAL DIAL-OUT MODEM (PRIMARY OR BACK-UP):

Serial set-up interface connects to an external modem that provides primary or back-up (in the event of a loss of GPS signal) connection to Legally Traceable Time[®] from NIST's ACTS or ITU-R services.

POWER:

90-240 VAC, 47-63 Hz from supplied external CE/UL/CSA approved power supply with IEC 320 universal power cord connector. Re-order number: PS06-0E0J-DT03. North American power cord included. Alternate type line cords or adapters may be obtained locally. Unit operates from 12 VDC nominal (+9.5 – +30 VDC) @ 1.0 amps. Rubidium, option 04 uses 24 VDC nominal (+22.5 – +30 VDC) @ 2.5 amps. Re-order number: PS06-0E1M-DT00.

FRONT PANEL:

- Ethernet port
- Status Indicators: "Power" and "Sync" multi-color LED
- Selectable 12 or 24 hour display, Hours, Minutes, Seconds, Day of Year

PHYSICAL & ENVIRONMENTAL

SIZE/WEIGHT:

- EIA 19" rack mount W x 1.75" H x 11.0" D/4.8 lbs. (483 mm W x 44 mm H x 305 mm D/2.2 kg)
- Rubidium option is 3.5" H (88 mm) and 8 lbs. (3.6 kg)
- Rack Mount hardware included (assembly required)

ENVIRONMENTAL:

Operating Range: 32°F to 122°F [0°C to 50°C]
Storage Range: -40°F to +185°F [-40°C to +85°C]
Relative Humidity: 10%–95%, non-condensing

AGENCY APPROVALS:

CE Mark: EN60950, EN55022, EN55024; FCC: Part 15; UL/CSA: (power adapter)

GPS ANTENNA

INDOOR OR OUTDOOR COAXIAL N TYPE:

Received Frequency: 1575.42 MHz
Satellites Tracked: One to twelve, GPS T-RAIM satellite error management
Acquisition Time: Cold start, 250 seconds typical

WARRANTY

FIVE-YEAR LIMITED WARRANTY

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

ORDERING INFORMATION

1. NetClock
NetClock/GPS Synchronized Master Clock, Model 9283
Option 03: Modem
Option 04: Rubidium (2U)
Option 05: OCXO
Option 06: IRIG input replaces GPS

ADDITIONAL ACCESSORIES

2. Antenna
GPS Outdoor Antenna, Model 8225
3. Antenna Accessories
Antenna Flat Roof Mount, Model 8213; Antenna Surge Protector, GPS, Model 8226; Antenna Surge Protector Grounding Kit, Model 8226-0002-0600; Antenna Pre-amplifier, Model 8227; Antenna Splitter, Model 8224; Antenna Cable, LMR-400 equivalent, CAL7xxx (xxx=feet) – Specify CALP7xxx for indoor plenum-rated cable.
4. Software
Contact the Sales department for more information. PresenTense Server and Client, NTP Auditor, and Lan Time Analyzer NTP software are available.
5. Time Distribution
Ethernet Time Server, Model 9288, one per secure network; TimeTap[®] Adapter, Model 8179T, RS-485 to RS-232, one per device, includes 12 VDC power supply. TimeBurst, Model 8185, broadcasts time to wireless devices over existing radio systems.
6. Redundant Systems
TimeGuard[®] Monitor/Selector, Model 8145, protects against single time server failure.
7. Display Clocks
TimeView[®] digital and analog clocks
8. Service Options
Premium Support Package
Extended Warranty