



# NetClock® /GPS

## Model 9183



- **Stratum 1 NTP/SNTP Time Server via GPS**
- **Meets NENA PSAP Master Clock Standard #04-002**
- **Ideal for synchronizing 9-1-1 systems with computer networks, CAD, Radio, Voice Recorder, ANI/ALI, LAN/WAN, Clients, Servers and Wall Clocks**
- **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 BaseT**
- **Remote diagnostics, upgrades, configuration and control over secure communication link**
- **Automatic adjustment for local time, daylight saving time and leap second**
- **Web-based user interface with Secure Sockets Layer (SSL) protection**
- **Secure remote login and file transfer with Secure Shell (SSH) and Secure Copy Protocol (SCP), Secure File Transfer Protocol (SFTP)**
- **Solid State**
- **Free software updates**
- **5-Year Limited Warranty**

### New in Version 2.3

- **Precision Oscillators for time sync if GPS sync is lost**
- **Enhanced SNMP**
- **Dial-out Modem**

The NetClock/GPS, Model 9183 is ideally suited for delivering world-wide, split-second timing to mission critical systems. The new NetClock/GPS offers additional reliability features. Available oven-stabilized crystal oscillator (OCXO) and Rubidium oscillators maintain time standard if time reference is lost. Optional dial-out modem provides back up to GPS or functions as the primary reference, such as for disaster recovery.

The NetClock/GPS automatically tracks up to twelve satellites simultaneously, and provides extremely accurate timing by synchronizing to the satellites' atomic clocks.

A variety of time code outputs are included to meet the requirements of numerous systems - A 10/100 BaseT LAN Port, two RS-232 serial ports, two RS-485 data bus ports, IRIG B/E AM/TTL, plus frequency outputs of 1 PPS and 10 MHz. Alarm outputs and programmable timer outputs are also provided.

Enhanced security features can be enabled or disabled: Secure Shell (SSH), Secure Sockets Layer (SSL), Secure Copy Protocol (SCP), Secure File Transfer Protocol (SFTP) and SNMP v1, v2 and v3 with host access restriction, ensure operational integrity.



# NETCLOCK®/GPS MODEL 9183 SPECIFICATIONS

## PERFORMANCE

### ACCURACY:

1PPS output  $\pm 50$  nanoseconds of UTC

**RS-232/RS-485:** Time code  $\pm 100$  microseconds to  $\pm 1$  millisecond of UTC, format dependent

**IRIG B/E**  $\pm 20$  microseconds to  $\pm 200$  microseconds of UTC, format dependent

**Ethernet NTP:** Output jitter within  $\pm 50$  microseconds relative to UTC typical.

10 MHz:

- **TCXO:**  $1 \times 10^{-10}$  typical 24-hour average locked to GPS
- **OXCXO:**  $1 \times 10^{-11}$  typical 24-hour average locked to GPS,  $2 \times 10^{-9}$  per week typical aging unlocked
- **Rubidium:**  $1 \times 10^{-12}$  typical 24-hour average locked to GPS,  $1 \times 10^{-11}$  per month typical aging unlocked

### OUTPUTS:

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

<sup>1</sup> Conforms with or exceeds RFC 1305 and 2030. Supports Unicast, Multicast, MD5 authentication.

<sup>2</sup> Serial time code formats: 0, 1, 2, 3, 4, 7, 8, 90, IBM Sysplex

### 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:** allows remote configuration and management over an encrypted connection.

### INPUTS:

Type	Connector
RS-232 Serial Set-up Interface <sup>1</sup>	DB9 female
GPS Antenna	Coaxial N type
Power	2.5 mm male, center positive

<sup>1</sup> Serial set-up interface configures network settings. The port works at 9600 baud, 8N1, and can be accessed with a PC terminal emulator.

### 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 other selected dial up service.

### POWER:

90-240 VAC, 47-63 Hz from supplied external CE/UL/CSA approved T00060 power supply with IEC 320 universal power cord connector. 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 T00061, 24 VDC nominal (+22.5 - +30 VDC) @ 2.5 amps.

### 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 (88mm) 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:** listed 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 option is warranted for two years.
- Extended warranty is available

## ORDERING INFORMATION

### 1. NetClock

NetClock/GPS Synchronized Master Clock, Model 9183

Option 03: Modem

Option 04: Rubidium (2U)

Option 05: OXCXO

### 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 Preamplifier, Model 8227

Antenna Splitter, Model 8224

Antenna Cable, LMR-400 equivalent, CAL7xxx (where xxx=feet)

Specify CALP7xxx for plenum-rated cable

#### 4. Software

Contact the Sales department for more information.

#### 5. Time Distribution

Ethernet Time Server, Model 9188, 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

Specifications subject to change or improvement without notice.

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For more information, please contact Spectracom.

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