



NetClock® /GPS Master Clock

Model 8183



- **Legally Traceable Time™ , Worldwide Precision Timing from GPS Satellite**
- **Ideal for Synchronizing 9-1-1 Systems and Computer Networks**
- **Meets NENA PSAP Master Clock Standard**
- **Automatic Adjustment for Local Time, Daylight Saving Time and Year**
- **Accurate to within 500 Nanoseconds of UTC Anywhere on Earth**
- **Scaleable Expansion Capability**
- **5-Year Warranty**

The Global Positioning System (GPS) is a network of 24 satellites orbiting the earth, and represents a \$13 billion investment from the U. S. Government. Each satellite carries on-board triple-redundant atomic clocks which are maintained accurate and traceable to UTC (Universal Coordinated time) by the U.S. Department of Defense and the U.S. Naval Observatory.

The Spectracom NetClock/GPS Master Clock automatically tracks up to eight satellites simultaneously, and provides extremely accurate timing by synchronizing to the satellites' atomic clocks. Because the GPS satellite system blankets the earth, the NetClock/GPS can be used anywhere on our planet.

A variety of time code outputs are available to meet the requirements of numerous systems – two RS-232 serial ports, two RS-485 data bus ports, IRIG B/E and TTL, plus frequency outputs of 10 MHz and 1 PPS. Alarm outputs and programmable timer outputs are also provided. The NetClock/GPS is ideally suited for delivering system-wide split-second timing information to public safety and emergency response systems of all types.

An international power supply is available for applications outside North America.

NETCLOCK/GPS MODEL 8183 SPECIFICATIONS

RECEIVED FREQUENCY:

1575.42 MHz (L1),
Coarse Acquisition (C/A)

SATELLITES TRACKED: Eight, Simultaneous

ACQUISITION TIME:

Cold start, typically less than 20 minutes. Warm start with ephemeris data and position, typically less than 2 minutes.

ACCURACY:

Typical
1PPS output ± 500 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
10 MHz $\pm 1 \times 10^{-8}$ from corrected internal oscillator

POSITION ACCURACY: ± 100 meters

OUTPUTS:

Two RS-232 Serial Comm.
Two RS-485 Once-per-Second
IRIG B/E
1PPS, Pulse Per Second
10-MHz Frequency Output
Alarm outputs
Programmable Timer Output

CONNECTORS:

DB9 female
Terminal Block
BNC
BNC
BNC
Terminal Block
Terminal Block

RS-232 and RS-485 ports operate independently and can be programmed during setup to output different time code data formats and at different baud rates. Contact Sales Department for full description of all time code formats.

Each port can follow UTC or any Time Zone. Baud rates are between 1200 and 9600, 8N1.

IRIG output is configurable to format B at 1000 Hz, E at 100 Hz or 1000 Hz AM or TTL, with or without signature control. AM output adjustable 0 to 10 V into 600 ohms. IRIG time codes can follow DST rules.

Alarm output, contact closure, for "Loss of GPS Lock", and "Loss of Time Sync".

Programmable Timer Output: Programmable relay closure with up to eight ON/OFF events.

CERTIFICATION: CE

INPUTS/CONNECTORS:

RS-232 Setup Interface: DB9 female Setup interface port is used to change factory default settings for all output and alarm ports. The port is also used to set Programmable Timer, Front Panel Display, recall report logs and upgrade software in FLASH memory. The port works at 9600 baud, 8N1, and can be accessed with a PC terminal emulator.

Antenna: Coaxial BNC type

POWER:

115 VAC to 12 VDC @ .75 amps, UL/CSA-approved power adapter (supplied). Connector: 2.1 mm male.

International Power Supply: PS00142

Input: 90 VAC to 240 VAC, 47 Hz to 63 Hz

Output: 12 VDC. UL 1950, CSA 22.2; No. 950, No. 234 level 3, IEC 950, TUV/CS, (EN60950) safety requirements.

FRONT PANEL:

Selectable 12 or 24 hour display (0.8", 0.56"), displays Hours, Minutes, Seconds. Red/Green Status Indicators: "GPS Lock", "Time Sync"

PHYSICAL & ENVIRONMENTAL

SIZE/WEIGHT: EIA 19"W x 1.75"H x 10.0"D rack /6 lbs

TEMPERATURE:

32° F to 122° F (0° C to 50° C) operating range
-40° F to 185° F (-40° C to +85° C) storage range

HUMIDITY: 95% R.H. non-condensing

ANTENNAS AND ACCESSORIES

GPS Antenna Model 8225

Size: 3.5" D x 3.25" H with 1"-14 threaded mounting adapter and 22" of PVC mast with mounting clamps.

Assembled Height: 24" (609.6 mm)

Cable Connector: N type female

LMR-400 Cable Length: 200' (60.96 m) maximum; with **Model 8227**, 400' (121.92 m) maximum., 250' (76.2 m) minimum.

Temperature: -30°C to +80°C operating range

Antenna Preamplifier Model 8227 - Indoor

Size: 1.25"D x 6.25"L (31.75mm x 158.75mm)

Cable Connector: N type female

Cable Allowed: 200' to 400' (60.96m to 121.92m) requires in-line preamplifier **Model 8227**.

Temperature: -22°F to +185°F (-30°C to +85°C) operating range

ORDERING INFORMATION

1. **NetClock/GPS Synchronized Master Clock, Model 8183.**

ADDITIONAL OPTIONS AND ACCESSORIES

2. GPS antenna Model 8225, and antenna mounting hardware.

3. **PS00142**, International Power Supply.

4. **TimeTap 230, Model 8179T**, for time distribution. Includes 12 VDC power adapter. Order one for each RS-232 device.

5. **Display Clocks**, TimeView™ 230, Model 9175; or TimeView™ 400, Model 9177.

6. **Antenna Accessories:**

Antenna Preamplifier, Model 8227

Antenna Surge Protector, GPS, Model 8226

Antenna Flat Roof Mount, Model 8213

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

7. **Software:** NetClock Time Manager - NTM5 to synchronize WIN 95/98/NT computer and Novell Servers. TimeSet-TS1 to synchronize TimeView Display Clocks from Win 95/98/NT or DOS Computers. Presentense - Complete Windows Network synchronization software for Win95/98/ME/NT/XP/2000/2003

8. **Ethernet Time Server, Model 9188:** accurate time for intranet and enterprise networks.

9. **TimeBurst, Model 8185** broadcasts time to every agency in your community.

WARRANTY: 5-Year Warranty

For more information, please contact Spectracom.

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