



# NetClock® /GTP Master Clock

## Model 8183A



- **FAA-Approved GPS TOY Clock**
- **Installed in FAA Mode-S and ARSR-4 Radar Systems**
- **Worldwide Precision Timing from GPS Satellite**
- **Replaces old GOES TOY Satellite Clocks**
- **Ideal for Synchronizing Differential FAA IRIG B Systems and Computer Networks**
- **Automatic Adjustment for Local Time, Daylight Saving Time and Year**
- **Accurate to Within 500 Nanoseconds of UTC Anywhere on Earth**
- **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/GTP (Global Time Provider) 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/GTP can be used anywhere on our planet.

A variety of time code outputs are available to meet the requirements of numerous systems. NetClock/GTP is ideally suited for delivering system-wide split-second timing information to computer and IRIG B synchronized systems.

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

# NETCLOCK/GTP MASTER CLOCK MODEL 8183A SPECIFICATIONS

## RECEIVED FREQUENCY

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

## SATELLITES TRACKED:

Eight, Simultaneous

## ACQUISITION TIME:

Cold start, typically less than 20 minutes.

## ACCURACY: Typical

1PPS output  $\pm 500$  nanoseconds of UTC with SA  
<500 nanoseconds of UTC without SA

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

**FAA IRIG: B**  $\pm 2$  microseconds when locked to GPS

**10 MHz**  $\pm 1 \times 10^{-8}$  from corrected internal oscillator

**POSITION ACCURACY:**  $\pm 100$  meters with SA,  
 $\pm 25$  meters without SA

## OUTPUTS:

RS-232 Serial Comm.  
RS-485 Once-per-Second  
FAA IRIG B, 4 outputs in one  
1PPS, Pulse Per Second  
10-MHz Frequency Output

## CONNECTORS:

DB9 female  
Terminal Block  
DB25 Male  
BNC  
BNC

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.

FAA IRIG B output is pulse-width-coded FAA modified IRIG B in RS-422/485 levels. Four buffered outputs provided.

## 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:

12 to 36 VDC, power input connector—banana jack with binding post on rear panel, fused, 6 Watts, front panel on/off switch. (Power adapter not included.)

## FRONT PANEL:

Selectable 12 or 24 hour display (0.8", 0.56"), displays Day of Year, Hours, Minutes, Seconds. Red/Green Status

**Indicators:** "GPS Lock", "Time Sync"

**WARRANTY:** 5-Year

## PHYSICAL & ENVIRONMENTAL

### SIZE/WEIGHT:

EIA 19" rack mount 1.75"H x 19.0"W x 10.0"D/4.25 lbs  
(44 mm H x 483 mm W x 254 mm D mm/2.0kg)

### 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 (88.9 x 82.55 mm) with 1"-14 threaded mounting adapter and 22" (558.8 mm) of PVC mast with mounting clamps.

**Assembled Height:** 24" (609.6 mm)

**Cable Connector:** N type female

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

**Temperature:** -22°F to 176°F (-30°C to +80°C)

### 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/GTP Synchronized Master Clock, Model 8183A.

## ADDITIONAL OPTIONS AND ACCESSORIES

- GPS antenna Model 8225, and antenna mounting hardware.
- TimeTap, Model 8179T, for time distribution. Includes 12 VDC power adapter. Order one for each RS-232 device.
- TimeView® digital and analog clocks.
- 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.
- Software: NetClock Time Manager - NTM5** to synchronize WIN 95/98/NT computer and Novell Servers. TimeSet-TS1 to synchronize TimeView Clocks from Win 95/98/NT or DOS Computers. Presentense - Complete Windows Network synchronization software for Win95/98/ME/MT/XP/2000/2003.
- Ethernet Time Server, Model 9188:** accurate time for intranet and enterprise networks.

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