

# Acutime 2000 Synchronization Kit

*Reliable and Precise Timing for Your Network*

## Applications

- E-commerce
- Data streaming
- Enterprise networks
- Network security
- Distributed systems
- Event time-tagging

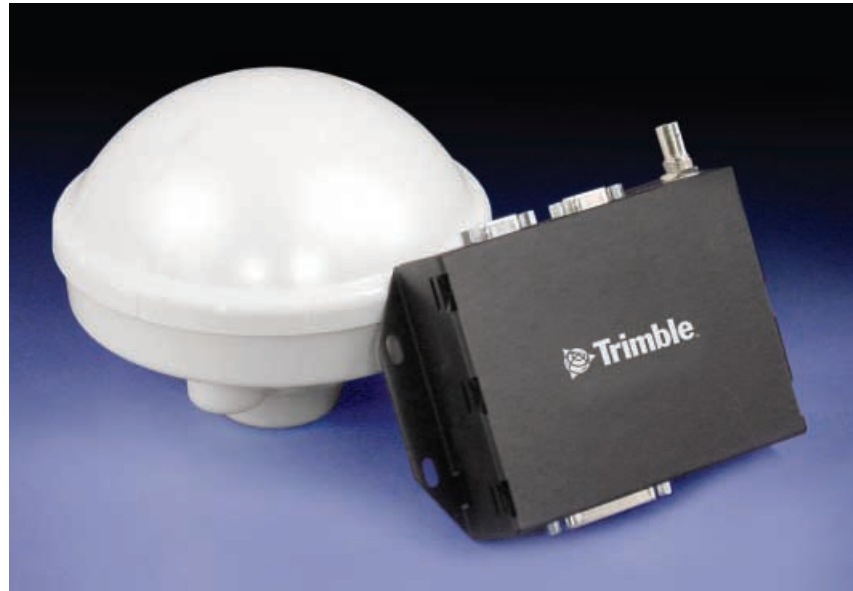
Trimble's Acutime™ 2000 Synchronization Kit offers global time synchronization for any digital system. Its exceptional performance shatters the myth of complicated, high-priced network synchronization by providing maximum efficiency for minimum cost.

The synchronization kit consists of Trimble's proven, jam-resistant Acutime 2000 GPS Smart Antenna, and a compact Synchronization Interface Module (SIM). It works in conjunction with Network Time Protocol (NTP), the leading standard for time distribution over networks.

The synchronization kit synchronizes your network to Stratum 1 precision with the reliability and universal convenience of the Global Positioning System (GPS). The Acutime 2000 GPS Smart Antenna produces a pulse-per-second (PPS) output accurate to Universal Coordinated Time (UTC) to within 50 nanoseconds (ns). Time transfer via an RS-232 cable allows your host computer to precisely calibrate your system clock to UTC, without degradation due to system load.

## Benefits of Synchronization

Any network can benefit from an independent precision time



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source. For example, in software development and file-sharing environments, all records are time-stamped accurate to a global time source, ensuring integrity of the most recent copy. In addition, by capturing an accurate history of when an error originated, an administrator can use time stamps to trace back to the exact point of a network failure.

## Ease of Integration

The Acutime 2000 Synchronization Kit can be bundled with new server installations and easily integrated into existing network infrastructure. Precision time transfer now only requires a single RS-232 connection to your PC's serial

port. The SIM combines all power and data connections in one compact unit.

## Getting Started

The Acutime 2000 Synchronization Kit contains everything you need to transform your system into a precision time source. Once NTP is installed on your system, simply connect the smart antenna to your server's serial port.

The Acutime 2000 Synchronization Kit and NTP create a low-cost, simple and precise solution for all your network synchronization requirements.

# Acutime 2000 Synchronization Kit

## Reliable and Precise Timing for Your Network

### DESCRIPTION

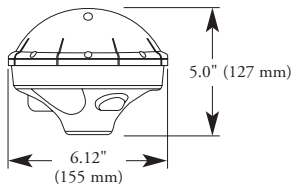
The Acutime 2000 Synchronization Kit contains everything you need to transform your host computer into a time server:

- The Acutime 2000 GPS Smart Antenna is an 8-channel GPS receiver and antenna capable of using over-determined time solutions to generate a timing pulse (PPS) and event time stamps which are synchronized to UTC within 50 ns (1 sigma)
- The Synchronization Interface Module (SIM) is CE and FCC Class B approved, and provides the following user ports:
  - Bi-directional RS-232 I/O interface to the antenna's RS-422 Control I/O Port
  - RS-232 time transfer interface supporting TSIP and NMEA protocols
  - 5V TTL PPS, 1 microsecond wide, 50Ω, synchronized to UTC within 50 ns (1 sigma) (BNC)
- 100-foot (30 m) interface cable
- Power supply and AC power cord

### PHYSICAL CHARACTERISTICS

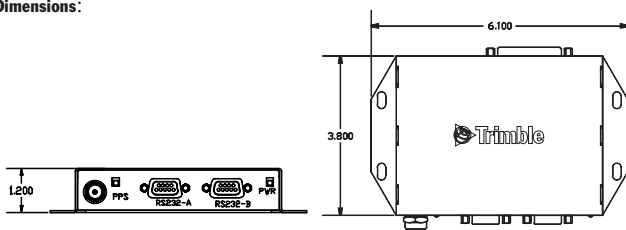
#### Acutime 2000 GPS Smart Antenna

<b>Dimensions:</b>	6.12" D, 5.0" H (155mm x 127mm)
<b>Weight:</b>	12.8 oz (363 g)
<b>Connector:</b>	12-pin round, waterproof
<b>Mounting:</b>	1"-14 straight thread



#### Synchronization Interface Module

#### Dimensions:



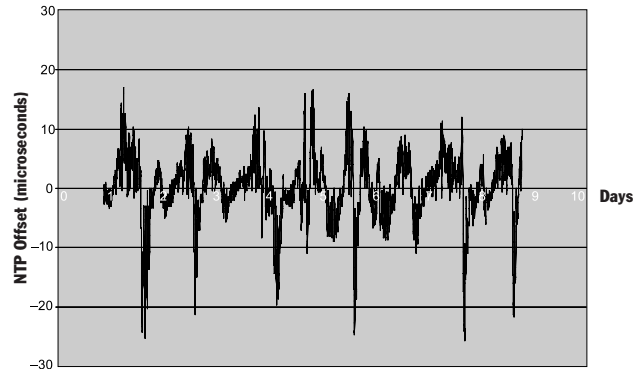
### ENVIRONMENTAL SPECIFICATIONS

<b>Operating temp:</b>	-40 to +85° C	
<b>Storage temp:</b>	-55 to +105° C	
<b>Vibration:</b>	0.008 g <sup>2</sup> /Hz	5 Hz to 20 Hz
	0.05 g <sup>2</sup> /Hz	20 Hz to 100 Hz
	-3dB/octave	100 Hz to 900 Hz
<b>Operating Humidity:</b>	95% RH, non-condensing @ 60° C	
<b>EMC:</b>	CE, FCC Class B	

### PERFORMANCE

The timing pulse (PPS) and event time stamps are synchronized to UTC within 50 ns (1 sigma).

Here is an example of Trimble synchronization kit performance on a typical Unix time server (using NTP v4) over several days.



### ELECTRICAL REQUIREMENTS

<b>Prime Power:</b>	+8 Vdc to +36 Vdc, reverse polarity protection
<b>Power Consumption:</b>	110mA @ 12 volts, 1.3 watts (typical), <1.5 watts max

### CONNECTIONS

#### Synchronization Interface Module

<b>Power Input</b>	Barrel Connector 2.5 mm 12-32V DC (24 standard), UL-Rated
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### NTP AVAILABILITY/OPERATING SYSTEMS

HP UX, Linux, Sun OS/Solaris, Windows NT  
Please see the Trimble website for updates and additions to this list.

### ORDERING INFORMATION

For detailed specifications on the Acutime 2000 Synchronization Kit, please refer to information at:  
[www.trimble.com/timing](http://www.trimble.com/timing)



Trimble Navigation Limited  
Corporate Headquarters  
645 North Mary Avenue  
Sunnyvale, CA 94086  
408-481-8940  
[www.trimble.com](http://www.trimble.com)

Trimble Navigation  
Europe Limited  
Trimble House  
Meridian Office Park  
Osborne Way, Hook,  
Hampshire RG27 9HX U.K.  
+44-1256-760-150

Trimble Navigation  
Australia Pty Limited  
P.O. Box 769  
Spring Hill QLD 4004  
Australia  
+61-7-3216-0044

Trimble Japan  
Shin-Ohashi Riverside  
Bldg.101 3F, 4F  
1-8-2 Shin-ohashi Kohtoh-ku,  
Tokyo 135-0007 JAPAN  
+81-3-5638-5018

