



# KT2000 GPS SNTP Network Timeserver

User Guide

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## Introduction

The Krontek GPS SNTP Timeserver is a fully featured, high performance Stratum 1 referenced timeserver which derives its time from the GPS satellite system. Its accuracy is within a few milliseconds of GPS time which is referenced to the Atomic Clocks maintained by the American National Institute of Standards and Technology (NIST). The KT2000 series Timeservers will provide time according to the SNTP protocol with only three satellites in view.

Configuration of the Timeserver is simple and is conducted via the network using an easy to understand telnet interface. Once configured, and in absence of a change in network circumstances, your Timeserver will be fit for years of service without additional maintenance.

## Installation

The most important requirement in installation of your GPS SNTP Timeserver is ensuring that the antenna is exposed to as much clear sky as possible.

To facilitate this, the Timeserver comes with a GPS antenna with 5 meters of cable, a second 5m antenna cable extension, and an angled window bracket to mount the antenna. NB: Do not connect or disconnect the antenna while power is applied as this may damage the GPS receiver.

Choose a window with an unobstructed view of the sky. You may need to experiment to find a suitable position. This can be done by placing the antenna in various positions [logging into the server](#) to check the satellite count. The antenna is weather-sealed and may be mounted outside the building if required.

Once a suitable position has been identified, the mounting bracket can be attached to the window using the included Velcro® tape. For windows exposed to high temperatures, the use of a silicon adhesive is recommended. The antenna is magnetic and should be attached to the surface of the bracket that has the small hole in it.

Screw the antenna connector to the antenna socket on the timeserver end plate. Ensure connector is tightened to finger-tight only. Connect the server to the network, then apply power to the device.

## Connecting to the Timeserver

When a suitable number of satellites are available and the server is receiving a valid time signal, the "Active" LED on the server will flash once per second. During the initial installation, it can take from 10 – 15 minutes to establish a "positional fix" which is then stored in memory. Subsequent power up sequences will be "warm starts" and should only require about a minute or so before the server is operational.

The timeserver decodes GPS time once per second. If the satellites are blocked, the server will continue to operate for a few minutes until the signal is restored. In the event of a continuous signal failure, the server will not respond to a client request.

Before you can communicate with the Timeserver, you must know its IP address. By default, your Timeserver is pre-configured with an IP address of 192.168.0.128 and will respond to a telnet session on default port 23.

To connect to the Timeserver, you have two options;

1. Connect to the device to a network that is already compatible. i.e. IP addresses in the range 192.168.0.xxx
2. Manually configure a PC to a compatible IP address (e.g. 192.168.0.50) and connect directly to the device using a network cable.

Suggested methods of establishing a telnet connection to your Krontek GPS SNTP Timeserver include using PuTTY or establishing a telnet session from the command line. For help on how to establish a telnet session, please refer to the Telnet Guide on the Krontek website.

**IMPORTANT:** When you are finished with your connection, ensure that you close the session by returning to the main menu and selecting option 99 to close the connection. Failure to do so may inhibit your ability to telnet in the future as only one session can operate at a time.

After establishing a telnet connection, you will be presented with the following menu.

```
*****
*
*   KRONTEK GPS SNTP TIME SERVER   *
*
*   Rev 3.01 15-Nov-2016          *
*
*   MAC 00:80:A3:93:1E:E1        *
*
*****
```

---- Menu ----

- 1 - Set device Address, Mask, Gateway
- 2 - Set/Change Passcode
- 3 - Set Broadcast
- 4 - Display Status
- 9 - Exit

Select?

These options are as follows;

### **1 – Set device Address, Mask, Gateway**

Select this to set the IP address of your GPS Timeserver.

The Controller will display;

Current IP Address: 192.168.000.128

Change Y/N?

If you select to change this, you will be prompted with each octet (three-digit field) in brackets. You can change this, or press enter to skip to the next field.

(192) 10.(168) 50.(000) .(128) 100

In the above example, we have changed the IP address to 10.50.0.100.

Once you make this change, you will have the option of selecting the subnet mask (via CIDR selection representing the number of bits in the prefix), and the gateway address.

Once all selections have been made, the Timeserver will display the new settings and ask for confirmation to save it.

## **2 – Set/Change Passcode**

This option allows you to set a passcode to restrict unauthorised access to the Timeserver.

The passcode requires four characters made of Alpha (A-Z) and numeric (0-9) characters. Lower case characters are converted to upper case.

To disable passcode checking, enter a code of four zeros (0000).

## **3 – Set Broadcast**

An SNTP broadcast is the transmission of an unsolicited SNTP packet. Many SNTP clients can be configured to “listen” for these broadcasts.

On a /24 class C network (subnet mask 255.255.255.0) with a device IP address of 192.168.0.70, the broadcast address will take the form 192.168.0.255. On a class B network, it would be 192.168.255.255. All broadcasts are on port 123.

In this menu, you have the option to send a single broadcast (generally only used for testing purposes) and the option to set the interval between broadcast transmissions. The broadcast interval is set by the number of minutes between broadcasts.

A broadcast interval of zero will disable the broadcast.

#### **4 – Display Status**

This option will display;

1. The number of satellites in view and available for use.
2. The ID number of the satellites in view and their signal strength
3. The ID number of the satellites used. These are the satellites from which the GPS receiver is processing data.
4. The current UTC time. UTC is the current time at the earth's zero meridian.