



KT2002 GPS SNTP PoE Timeserver

User Guide

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Introduction

The Krontek GPS SNTP PoE Timeserver is a fully-featured, high-performance Stratum 1 referenced timeserver that derives its time from the GPS satellite system. Its accuracy is within a few milliseconds of GPS time, referenced to the Atomic Clocks maintained by the American National Institute of Standards and Technology (NIST). The KT2002 Timeserver will provide time according to the SNTP protocol with only three satellites in view.

The Timeserver's Configuration is simple and conducted via the network using an easy-to-understand telnet interface. Once configured and without any changes in network circumstances, your Timeserver will be fit for years of service without additional maintenance.

Installation

The most critical requirement in installing your GPS SNTP PoE Timeserver is ensuring the antenna is exposed to as much clear sky as possible.

To facilitate this, the Timeserver comes with a GPS antenna with 5m 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. Appropriate positioning can be determined by placing the antenna in various positions and [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, a silicon adhesive is recommended. The antenna is magnetic and should be attached to the bracket's surface with the small hole.

Screw the antenna connector to the antenna socket on the timeserver end plate. When tightening the antenna, ensure that this is finger-tight only. Connect the server to your PoE-enabled network hardware, and the device will power up.

When a suitable number of satellites are available, and the server receives a valid time signal, the "Active" LED on the server will flash once per second. During the initial installation, it can take 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.

Connecting to the Timeserver

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 communicating 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 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 PoE Timeserver include using PuTTY or establishing a telnet session from the command line. For help establishing 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 simultaneously.

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 SNTP PoE Timeserver.

The Controller will display;

Current IP Address: 192.168.000.128
Change Y/N?

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

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. Lowercase 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 can send a single broadcast (generally only used for testing purposes) and 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. UTC is the current time at the earth's zero meridian.