

Krontek

KT2000 GPS SNTP Timeserver



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Communicating with the Controller

Before you can communicate with the Controller you must know its IP address.

The Controller comes pre configured with an IP address of 192.168.0.128 and responds to a telnet session on default port 23. There are three options to enable communications with the Client:

1. Your network is already compatible, i.e. 192.168.0.xxx
2. Configure a PC to a compatible IP address, i.e. 192.168.0.50, and use a network crossover cable.
3. Use the DeviceDetector utility.

In reference to point 3. Download the utility DeviceDetector.zip from our website "www.krontek.com.au/downloads/devicedetector.zip" to your PC and unzip it. When you launch the program it will scan the network for Krontek Network Time devices (irrespective of their IP address) and list them. Click on the device you wish to configure. The IP and Subnet Mask address will be presented for editing.

After you update the settings the Controller will reboot. You will need to run DeviceDetector again to find the Controller and ensure the new address is correct.

Once you have set the address you can establish a telnet session using a telnet communications program such as HyperTerminal, HyperTerminal is usually included with your PC operating system. Use windows 'start' -> 'help' -> 'search' and type in HyperTerminal to locate it on your machine. If it is not installed it is available from www.hilgraeve.com.

When using HyperTerminal use the TCP/IP connect option, the Controllers IP address and port 23.

An alternative to HyperTerminal is to open a DOS command window and type in "telnet xxx.xxx.xxx.xxx" (where x is the IP address you have assigned the Controller). The Controller uses the default telnet port 23 for the connection.

Important: Ensure you disconnect from the telnet session either by closing the terminal window or exiting the Controller menu using "9". Failure to do this will inhibit another session from being opened as only one session can operate at one time.

Introduction

The Krontek KT2000 Network Timeserver provides SNTP (RFC2030) compliant time to compatible clients. Its time reference is the GPS satellite system that provides a time source traceable to the American National Institute of Standards and Technology (NIST). Accuracy is to 1.0 ms.

The Timeserver requires a minimum 3 GPS satellites in view before it will respond to a client request. If less than 3 satellites are available the Timeserver will not respond to a time request. The satellite count can be accessed via telnet.

The Timeserver is equipped with an auto-sensing 10/100Mbit Ethernet Interface and has an enterprise capacity of up to 38,000 client requests per second.

Main Menu

After making a telnet connection you will be presented with the following (or similar) menu:

```
*****
*
*           Krontek
*   GPS Network Timeserver
*   Rev 1.30 08-Jun-2007
*
*   MAC 00:20:4A:93:1E:E1
*
*****
```

---- Menu ----

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

- 9 - Exit

Select?

1 - Set device Address, Mask, Gateway:

Select this to set the IP address of your network Time Server.

The Controller will display:

```
Current Time Server address: 192.168.000.070
```

```
Change Y/N?
```

If you opt to change you will be prompted with each 3 number field in brackets, you may change it or press enter to skip to the next field.

```
(192) 220 . (168) 150 . (000) 0 . (070) 75
```

In the above example we changed the address to 220.150.000.075

You will then have the option of selecting the subnet mask and after that setting the gateway address.

The Controller will display the new settings and ask for confirmation to save it.

2 – Set/Change Passcode:

This option allows you to set the passcode to restrict unauthorized access to the controller.

Four characters are required. Alpha (A-Z) and numeric (0-9) characters are accepted. Lower case characters are internally converted to upper case.

A code of four zeros (0000) will disable passcode checking.

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 class C network (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 to port 123.

In this menu you have the option to send a single broadcast (generally used for testing purposes) and the option to set the minute interval between broadcast transmissions. A transmission interval of zero will disable the broadcast.

4 – Display Status:

This option will display:

1. The number of satellites in view – this is the number of satellites 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 earths zero meridian.

INSTALLATION

The most important requirement of the installation is to ensure the antenna is exposed to as much clear sky as is possible.

The Timeserver comes complete with a GPS antenna with 5 meters of cable and an angled window bracket to mount the antenna. The mounting bracket can be attached to the window using Velcro® tape. The use of a silicon adhesive is recommended for windows exposed to high temperatures. Attach the antenna to the surface of the bracket that has the small hole in it (the antenna is magnetic).

Note: Do not connect or disconnect the antenna when power is applied as this may damage the GPS receiver.

Screw the antenna connector to the antenna socket on the timeserver side plate. Finger tight is acceptable. Attach the server to the network, then apply power.

Choose a window that has an unobstructed view of the sky. You may have to experiment to find a suitable position. This can be done by placing the antenna in various positions and then checking the server for the satellite count.

The antenna is weatherproof and may be mounted outside the building if required

The “Active” led on the server will flash once a second when a suitable number of satellites are available and the server is receiving valid time. During the initial installation it can take from 10 to 15 minutes to establish a “positional fix” this 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 server 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.