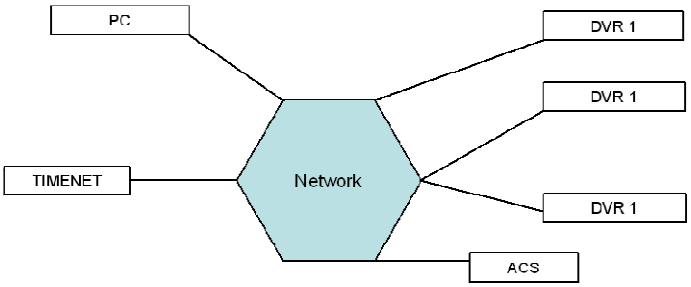
TIMENET

USER MANUAL

How to use TIMENET

TIMENET is used to provide an accurate atomic clock reference time to network devices using Network Time Protocol (NTP). TIMENET receives the reference time directly from the GPS satellite system, and so is a top level (i.e. Stratum 1) system clock and provides a legally verifiable time with full traceability.



TIMENET allows CCTV systems (especially DVRs) and Access Control Systems to be properly synchronised to the precisely correct time, without using an external Internet connection.

In the example shown a TIMENET unit is used to synchronise three DVRs, an Access Control server and a control PC.

Cable connection diagram

Installation sequence

1) Mounting

⚠ **The TIMENET unit should only be installed indoors or in an appropriately rated enclosure.**

The GPS antenna should be mounted on the inside of a window which has at least a partial view of the sky, although the greater the view of the sky, the faster the GPS lock (see separate antenna mounting instructions). If the TIMENET unit is to be located on a wall, then the supplied wall mounting tabs should be slid into the slots on the side of the case. Note : if these are not fitted already, one end plate should be unscrewed and the black plastic collar removed first, before sliding in the wall mount tabs and re-assembling. The unit should be securely mounted and should not be supported by the attached cables.

Connect the GPS antenna cable, ensuring that the cable connector is screwed on.

2) Network & power connection

⚠ **TIMENET should only be used with a Class II Isolated power supply.**

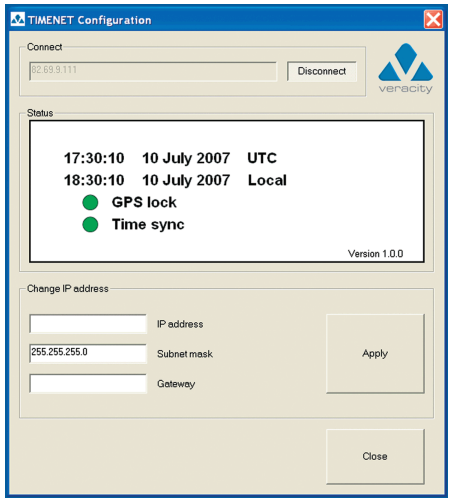
Connect the network cable, and then the 6V DC power, using the PSU supplied with the unit. The green LED will switch on immediately to show the presence of power. During the boot-up process, the LED will go off, on, then off again. After a minute or so, the unit will be running and the green LED will blink with short pulses. This indicates normal running with no GPS signal lock. After approximately a couple of minutes, assuming the GPS antenna has been properly mounted and connected, the green LED will switch to a long pulse, indicating GPS signal lock. Note : depending upon siting of the antenna, it may take longer to lock onto the signal.

The amber LED indicates network activity.

3) Set-up and configuration

Copy the TIMENET Config.exe program from the TIMENET USB key onto a Windows PC and connect the PC to the same network as the TIMENET. The default IP address of the TIMENET unit is 192.168.42.7 - this is also printed on the serial number label on the underside of the unit. Configure the network settings of the PC to these same domain (e.g. 192.168.42.100).

Run the TIMENET Config program. The default IP address will automatically appear in the IP address field. Click on Connect. This will connect to the TIMENET device. (If the program cannot see the TIMENET, check your network connection and settings using the PING command).



The TIMENET program will show the dialogue as shown left. The UTC time will be shown, as well as the local time (as defined by the local setting of the Windows time zone). To change the IP address setting for your application, simply enter the IP address, Subnet mask and Gateway. Click on Apply to write the settings to TIMENET. This will automatically cause the TIMENET system to re-boot with the new IP settings. This will take a couple of minutes. Be sure to re-set the PC to the new IP domain before re-checking TIMENET operation. Note that the Time Sync LED on the dialogue above make take some time to turn from Red to Green, as this is a function of the NTP system, which requires good signal lock for a period before properly synchronising with the atomic time reference.

To reset TIMENET to its default IP address, use a paper clip to press and hold the reset button (see connection diagram) for a couple of seconds until the green LED starts flashing rapidly. TIMENET will re-boot with the default IP address.

Note that you can synchronise your Windows PC to TIMEMET using the Internet Time tab of the Windows clock set up dialogue. TIMENET is now acting as an accurate NTP server.

Software & copyright notices

TIMENET contains open source products released under GPL V2 / NTP license. The relevant products can be downloaded for free from the following locations, or be provided by Veracity UK Ltd for a fee, upon request to info@veracityuk.com

uClinux	http://www.uclinux.org/
NTP Server	http://www.ntp.org/
BusyBox	http://www.busybox.net/

Manufacturer's declaration of conformity

The manufacturer declares that the equipment enclosed with this certificate conforms with the essential protection requirements of the EMC Directive 89/336/EEC and has been designed and manufactured to the following specifications:

BS EN 55022:1998 Emissions (Radiated)

BS EN 55024:1998 Immunity

BS EN 61000-4-2:1995 Immunity to ESD

BS EN 61000-4-3:20002 Immunity to Radiated RF Fields (3V/m)

RoHS FC CE