# TME3000

## Time source characterization

***Delta PPS measurements between GNSS, NTP, PTP, Reference PPS (NMEA or isolated), IRIGB.***

***Measurement accuracy of 10ns***

***Secure access by SSH***

***Protected configuration on SDCARD***

***Accuracy of PPS ± 50ns / UTC when synchronized by GNSS***

***Monitoring with SNMP V2c, V3***

The TME3000 is an equipment allowing characterization of time source accuracy and stability.
It compares PPS from different sources and display the results on screen and via remote control for log and statistical analysis purpose.

### NTP client

The equipment is a NTP client and can accept several NTP servers that it can compare. Thanks to its design the NTP client accuracy is better than 100us.

### Oscillator

An internal OCXO type oscillator provides a 10 MHz frequency used to maintain time with a stability of (Δ F/F) $1x10^{-9}$/day in case of loss of GNSS time source (No GNSS signal or free running mode)
When disciplined (GNSS locked running mode) the stability is better than $1x10^{-10}$

### GNSS

The internal GNSS receiver is a specific receiver dedicated to time application. It is able to acquire 24 or more satellites (depending on the type of receiver) simultaneously. It delivers a very high precision UTC second reference pulse.

### Remote monitoring

The remote control of the equipment is done via the network, using:

- The SNMP standard protocol (MIB provided)
- The standard SSH protocol
- An UDP or TCP frame containing the time and status of the equipment can be emitted every second

### Configuration

The entire configuration of the equipment is contained in a removable SDCARD memory for easy system configuration and equipment update. In case of equipment replacement, the current configuration can be simply transferred by plugging the SDCARD in the new equipment minimizing the MTTR.
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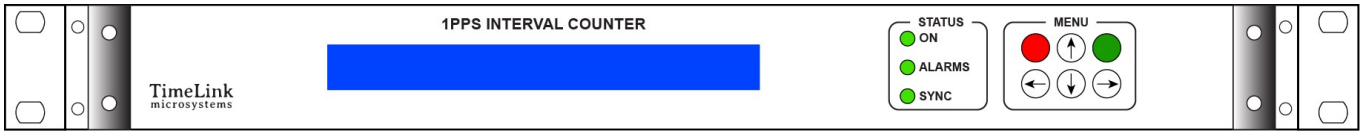


*TME3000 front face*


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# Specifications

## NETWORK PROTOCOLS

### NTP (Network Time Protocol)

NTP (RFC 1305) SNTP (RFC 1361) using UDP 123 port.
Server configuration V3, V4 or automatic V3/V4.

### SNMP (Simple Network Management Protocol)

(RFC 1155, 1157, 1213) V2c, V3
SNMP provides to the network administrator the equipment status.
For security reasons no configuration changes can be made with this protocol.

### SSH (Secure Shell Protocol)

SSH allows accessing securely the equipment.

### Network Interface

IEEE 802.3. 10/100/1000 Ethernet

### GNSS Antenna type

TNC connector
3V or 5V active antenna
Powered by receiver
**(Antenna is not included)**

### Console

A console link for equipment maintenance is available on the rear panel. To compensate for the rarefaction of RS232 serial interfaces on PCs, the equipment allows a direct connection in USB through an integrated USB / serial converter. This USB connection is dedicated to a serial link and cannot accommodate any other type of device.

On request, the Console link can be RS232-type on a 9-pin SubD connector or removed.

### Internal Reference

Internal 10MHz. OCXO Oscillator
Output 10 MHz sine +13 dBm ±1 dBm / 50 Ω
Free running mode:
Long-term stability
$< 1.10^{-9}$ / day
$< 4.10^{-8}$ / month
$< 3.10^{-7}$ / year
GNSS locked running mode:
Long-term stability
$< 1.10^{-10}$

### Connectors:

1 x TNC for the GNSS antenna input
1 x BNC for 1PPS output
1 x subD9 for 1PPS input
1 x BNC for IRIG B122 input
1 x USB female for serial console
1 x RJ45 network connection

### Temperature:

Operating temperature: 0 ° to 60 ° C
Storage temperature: -20 ° to 70 ° C
Operating relative humidity:
10% to 90% (non-condensing)
Storage relative humidity:
5% to 95% (non-condensing)

### Dimensions:

Rack 1U 19 "Depth 13.8 in.

### Weight:

< 6.61 lb including power cables

### Certification:

Certified CE, ROHS and ITAR Free

### MTBF:

> 100 000 h

### Standard

Source GNSS, NTP, Ext PPS

### Options :

Additional PTP source
PTP v2 IEE1588-2008
Default PTP profile


*TME3000 back face*

## Ordering code

*TME3000: standard model*
*TME3000-PTP*