

# TMS3700

## Multi-port NTP server with GNSS & IRIGB reference

The TMS3700 is rack unit equipment able to provide a high stability time source to any Ethernet TCP/IP network.

This timeserver uses the NTP (Network Time Protocol) and TP (Time Protocol) to synchronize all the computers connected to the network.

### NTP Server

The TMS3700 server is NTP-Primary server type with the following functions :

- Level 1 server, compliant with NTP protocol release 3.0 or 4.0
- Mode : server (question/answer) or broadcast

The client's computers could be synchronized with a precision of 1 to 10 ms, depending on network load.

The TMS3700 uses two independent sources to get the time and to ensure synchronization:

- An integrated GNSS receiver.
- An IRIGB external reference input.

Priority is given to the GNSS source when available because of its greater precision.

### Multiports

The NTP service is available on 3 ports:

- 10/100 Mbps Ethernet port shared with supervisory functions
- two ports 10/100/1000 Mbps dedicated to the NTP service

### Irig-B

The IRIGB input uses the standard 1 KHz amplitude modulated signal compliant with IRIGB STANDARDS 200-98.

### Remote control

Remote monitoring of the equipment is made by the network link (port 10/100 Mbs) using the integrated web server.

### Interfaces

A Pulse top second (1PPS) synchronous with internal time is available at the output. This signal allows the verification of the synchronization on the IRIGB signal .

An RS232 connection allows access for maintenance of equipment, mainly updates of the internal software..

### GNSS

GNSS receiver is dedicated to time applications, it is able to acquire 12 satellites or more (depending of receptor type) simultaneously. It delivers a high precision top second.

### Oscillator

An internal OCXO type oscillator allows a time stability of  $1 \times 10^{-9}$ /day in free running mode. (GNS & IRIGB loss)

### Configuration

The entire configuration of the equipment is contained in a removable Micro SD memory SDCARD.

This approach allows a fast and safe reconfiguration in case of replacement of the unit..



TMS3700 front face of the equipment

## Features

### NTP/SNTP

(Network Time Protocol):  
NTP (RFC 1305) SNTP (RFC 1361) port  
UDP 123.  
Server configuration : V3, V4 or V3/V4  
automatic.

### TP (Time Protocol)

#### DAY TIME

Time (RFC 868) using port UDP37

### HTTP :

Web pages for remote control.

### Connectors :

TNC for GNSS antenna  
BNC isolated: IRIGB input  
BNC for 1PPS output.  
BNC for 10 MHz output  
SUB'D 9 pins female for the console  
serial link .  
RJ45 for the network links.

### 1PPS accuracy

± 100 ns relative to UTC when locked  
to GNSS.  
± 500 ns relative to the beginning of  
the IRIGB frame when the equipment  
is synchronized by IRIGB.

### Network interface:

Ethernet IEEE 802.3. 10/100 Base TX.

### IRIGB code:

IRIG-B, signal amplitude modulated  
1/3, 1/1 – isolated by transformer.  
Code input are compliant with the  
"year" information.

### Internal reference:

Oscillator type OCXO OSTAR 10 MHz.  
Output : 10 MHz sinus +13 dBm/50 Ω.  
Long term stability in free running  
mode :  
<1.10<sup>-9</sup> / day,  
<4.10<sup>-8</sup> / month,  
<3.10<sup>-7</sup> / year.  
Disciplined mode :  
< 1.10<sup>-10</sup>.

### Dimensions :

Rack 1U, 19", depth: 350 mm  
Weight : 3 kg  
Consumption : 20 W

### MTBF :

TMS3700 : 100 000 h

### Power supply :

Power supply 230V AC :  
Female CEE 2P+T with filter & switch  
On/Off  
Voltage : 85-264VAC / 47-440Hz  
Consumption : < 20W at 230VAC/50  
Hz

### Ordering:

*TMS3700: standard unit*