TMS3700

Isolated 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.
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Oscillator

An internal OCXO type oscillator allows a time stability of $1x10^{-9}$/day in free running mode. (GNSS & IRIGB loss)
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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:

Three Ethernet IEEE 802.3.
10/100 Base T.

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 :
<1.10-9 / day,
<4.10-8 / month,
<3.10-7 / year.
Disciplined mode :
< 1.10^{-10}.

Dimensions:

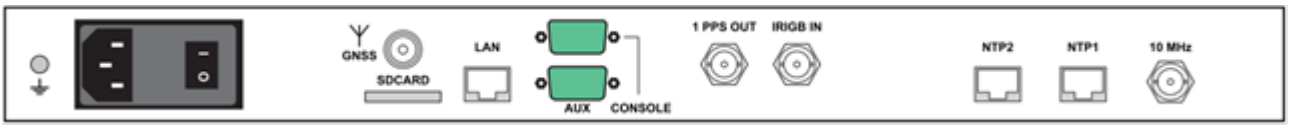
Rack 1U, 19'', depth: 350 mm
Weight : 3 kg
Consumption : 20 W

MTBF :

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



TMS3700 rear face

Ordering:

TMS3700: standard unit