TimeLink
m i c r o s y s t e m s

TMS2000

GPS or IRIGB network time server

The TMS2000 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 synchronise all the computers connected to the network.

NTP Server

The TMS2000 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 synchronised with a precision of 1 to 10 ms, depending on network load. Equipment and server status information's are available through the SNMP (MIB) protocol.
A NTP client must be installed on every client computer for his synchronisation with the server.

It holds two outputs connectors:

- Standard RJ45 for network link.
- SubD 9 pins dedicated to RS232 link which sent a time frame every second (1Hz). Any PC using a specific software driver in order to synchronize his internal clock could read this frame.

A choice of two independent time sources is available for time input:

- IRIGB input
- A GPS module able to provide both UT and high stability 1 PPS signal.

GNSS

The GPS module receiver, 12 channels, able to acquire 12 satellites and to deliver a very high precision 1 PPS.

Irig-B

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

Remote control

The equipment remote control function uses a dedicated RS232 link. Also, the TELNET utility software allows the same operations though the network.
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Oscillator

An internal OCXO type oscillator allows a time stability of 1×10^{-7}/day in case of external time source loss. (IRIGB in or GPS failure)

Configuration

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

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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 input antenna
BNC isolated: IRIGB input
BNC for 1PPS output.
SUB'D 9 pins female for the console serial link .
RJ45 for network connection.

Network interface:

Ethernet IEEE 802.3. 10/100 Base TX.

1 PPS accuracy :

± 100 ns relative to UTC when the equipment is disciplined with GPS.
± 500 ns relative to the beginning of the IRIGB frame when disciplined with IRIGB.

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 10 MHz 1 ppm
Stability in disciplined mode :
$< 1.10^{-9}$.

Accessories :

To be specifies at time of order regarding the receiver type:
- o   Antenna GNSS (GPS, GPS+GLONASS,.......)
- o   lightning arrester

Dimensions :

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

MTBF :

TMS2000   : 100 000 h

Ordering:

TMS2000: standard unit with GPS receiver
TMS2000-1: unit with   GPS/GLONASS receiver