

# TMG1800

## GNSS

## disciplined time & frequency generator

The TMG1800 is a GNSS disciplined time & frequency generator designed for a wide range of applications. The equipment is housed in 1U 19" standard case. GNSS signal is used for long term disciplining of the internal oscillator.

### GNSS

The internal GNSS receiver is a specific receiver dedicated to time application. It's a bi-constellation model able to acquire both GPS and GLONASS satellites simultaneously. It delivers a very high precision UTC second reference pulse.

### IRIG-B generator

The equipment includes a IRIG time code generator that allows to provide: an IRIGB122 signal (amplitude modulated analog signal).

These signals are in phase with the internal 1PPS equipment itself synchronized on the 1PPS of GNSS reference.

### Oscillator

An internal OCXO type oscillator provides a 10 MHz frequency used to maintain time. The stability of this oscillator is better than  $\pm 1 \times 10^{-9}$  per day in case of loss of external time sourcing.

When disciplined by the GNSS, the long term stability remains better than  $5 \times 10^{-11}$ .

### NTP Service

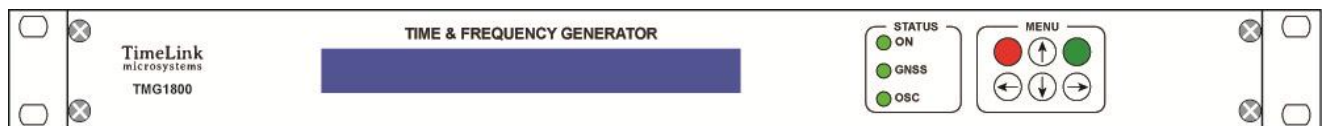
The TMG1800 includes a time service implementing standard NTP protocol (Network Time Protocol) allowing any computer or equipment linked to the network to synchronize. Customer's computers can be synchronized with an accuracy of 1 to 10 ms. NTP client software must be installed on each client for its synchronization with the server.

### Remote control

The remote control of the equipment is done via the network, using an internal web server

### Configuration

The overall configuration of the unit is stored on a removable SDCARD memory which allows remote software update easily.



TMG1800 front panel

## Specifications

### Outputs

#### 1 PPS output

TTL level  
Accuracy of  $\pm 100$  ns relative to UTC when locked to GNSS.

#### IRIGB outputs

IRIG B122  
Modulated code (B12x) :  $3V \pm 0.5 V$  peak-peak 1/1: 1/3 ratio isolated by transformer. BNC connectors (analog)

#### 10 MHz Output

Level +13 dBm  $\pm 1$  dBm, 50  $\Omega$

#### Guaranteed Phase noise:

1Hz <-90 dBc/Hz  
10Hz <-110 dBc/Hz  
100Hz <-130 dBc/Hz  
1 KHz <-145dBc/Hz

#### Internal reference

OEXO type Oscillator, 10 MHz

#### free running mode:

Short term stability:  
1s-10s < 2.10<sup>-11</sup>  
Long term stability:  
1 day < 1.10<sup>-9</sup>  
1 month < 3.10<sup>-8</sup>  
1 year < 1.10<sup>-7</sup>

#### locked running mode:

Long term stability: < .10<sup>-10</sup>

#### GNSS Antenna type

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

#### Console

RS232 compliant  
Console for configuration & maintenance

#### Connectors:

1 x TNC for the GNSS antenna input  
1 x BNC for 1PPS output  
1 x BNC for 1PPS input (option)  
1 x BNC for IRIG B122 output  
1 x BNC for 10MHz outputs Frequency  
1 x SUB'D 1 x 9-pin female for serial console  
SUB'D 1 x 9-pin female to output the output "AUX" (reserved)  
1 x RJ45 network connection

#### Temperature:

Temperature: -10 ° to 60 ° C  
Storage temperature: -20 ° to 70 ° C  
Relative Humidity range: 10% to 90% (non-condensing)  
Storage Relative Humidity: 5% to 95% (non-condensing)

#### Power supply:

230V AC mains supply:  
EEC socket 2P + with filter & On / Off switch voltage: 85-264VAC / 47-440Hz  
Power consumption: <20W 230VAC 50Hz

#### Certification:

Certified Hardware CE, ROHS and ITAR

### 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)  
(RFC 1155, 1157, 1213) V2c or V3  
SNMP provides to the network administrator the equipment status.

#### HTTP

The integrated web server allows to view the status of the equipment.

#### TCP / UDP

Remote in "push" mode (UDP / TCP) or "request / response" mode (TCP).

#### Dimensions:

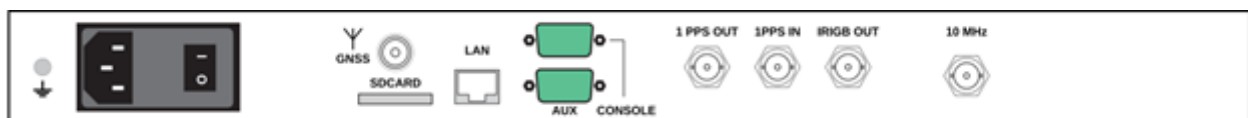
Standard 19" 1U with Depth of 350 mm

#### Weight:

< 3 kg

#### MTBF

> 100 000 h



TMG1800 rear panel

### Ordering code

TMG1800: Standard model

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