

# TMG1210

## GNSS and IRIGB disciplined time & frequency generator

The TMG1210 is a GNSS/IRIGB disciplined time & frequency generator designed for a wide range of applications. The equipment is housed in 1U 19" standard case. GNSS/IRIGB signal is used for long term disciplining of the internal oscillator.

### GNSS synchronization

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.

### IRIGB synchronisation

The input IRIGB signal is an amplitude modulated analog signal (B12X code). GNSS synchronization is selected first because of its better long term stability.

### Irig-B generator

The equipment includes an IRIG time code generator that allows providing an IRIGB122 signal (amplitude modulated analog signal) and an IRIGB002 (DCLS) over RS422. Those 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 TMG1220 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 10ms. 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.

TMG1210 front panel



## Specifications

### Outputs

#### 1 PPSoutput

TTL level  
Accuracy of  $\pm 100$  ns relative to UTC when locked to GNSS.  
Accuracy of  $\pm 500$  ns relative to IRIGB when locked to IRIGB.

#### 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)  
IRGB 002 (DCLS) over RS422 standard or IEEE1344 (configurable code)

#### 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 IRIGB122 input (isolated)  
1 x BNC for 1PPSoutput (isolated)  
1 x BNC for 1PPSinput (isolated)  
1 x SUB'D 1 x 9-pin female for IRIG B002 output  
1 x SUB'D 1 x 9-pin female for serial console  
1 x RJ45 network connection

### Temperature:

Temperature:  $-10^{\circ}$  to  $60^{\circ} C$   
Storage temperature:  $-20^{\circ}$  to  $70^{\circ} C$   
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, ITAR Free

### Network Protocols

#### NTP

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

#### TP (Time Protocol) - DAY TIME

Time (RFC 868) over port UDP37

#### 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 viewing the status of the equipment.

#### TCP / UDP

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

#### Dimensions:

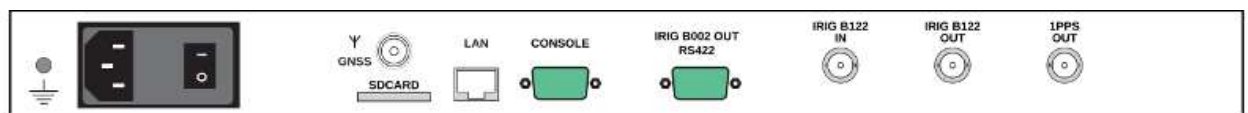
Standard 19" 1U with Depth of 350 mm

#### Weight:

<3 kg

#### MTBF

>100 000 h



TMG11210 rear panel

### Ordering code

TMG1210: Standard model