

# TMG512x

## X= 1 to 3

### Time Code Generator:

**STANAG 4430, 4372,  
ICD-060, 1PPS, IRIG-B 00X,  
NMEA ZDA**

### 8 outputs

#### Choice of synchronization source:

**TMG5121: GNSS  
TMG5122: ICD-060  
TMG5123: NMEA (ZDA)**

#### 8 programmable outputs:

**- 1PPS  
- IRIGB 00X  
- ICD-060  
- STANAG 4430/4372  
- NMEA ZDA**

#### Factory choice of electrical interface:

**- RS422 (default)  
- TTL  
- ICD-060**

**Monitoring through HTTP/HTTPS  
using a web interface or via SNMP  
V2c/V3**

**Easy software update through  
embedded SDCard**

#### NTP V4

#### Services

- SYSLOG
- SSH

The equipment is a time and frequency generator disciplined by an external reference and based on a high stability pilot to guarantee hold over performance when losing its external reference.

Its 8 programmable outputs can be selected amongst IRIG B00X, 1 PPS, ICD-060, STANAG 4430/4372, NMEA ZDA. The equipment is housed in 1U 19" standard rack

### GNSS Synchronization

The internal GNSS receiver is a specific receiver dedicated to time application. It is a multi-constellation (GALILEO GPS, GLONASS, BEIDOU) receiver. It delivers a very high precision UTC second reference pulse.

### ICD-060 Synchronization

The TMG5122 is synchronized by an ICD-060 time code over RS422 and its ICD-060 PPS.

### TIME CODE / PPS generation

The equipment can generate 8 independent outputs digital time signals over RS422 within the following formats:

- 1 PPS
- Havequick ICD-GPS-060 Message
- IRIG B00X Message
- STANAG 4430 (XHQ) Message
- STANAG 4372 / iii Message
- NMEA ZDA

The electrical format can be adjusted at factory on-demand amongst: RS422, ICD-060, TTL.

Each output message can be programmed amongst: 1PPS, IRIG B00X, ICD-060, STANAG 4430/4372.

### Oscillator

An internal OCXO type oscillator provides a 10 MHz frequency used to maintain time. The stability of this oscillator is better than  $1 \times 10^{-9}$  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

This equipment includes a time service implementing standard NTP protocol (Network Time Protocol) allowing any computer or equipment linked to the network to synchronize.

**NTP client** software must be installed on each client for its synchronization with the server.

### Remote monitoring

The remote monitoring of the equipment is done via the network, using:

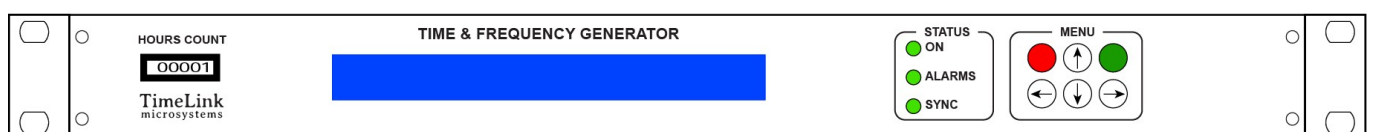
- The SNMP standard protocol (MIB provided)
- A web interface using HTTP or HTTPS
- A proprietary UDP or TCP protocol adding control features

### Configuration

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

### Options

- 2<sup>nd</sup> power supply AC / DC
- Internal pilot
- Independent LAN outputs (max4)
- 10 MHz outputs



Front Panel)

## Specifications

### NTP

(Network Time Protocol)  
NTP (RFC 1305) SNTP (RFC 1361) using UDP  
123 port.

### SNMP

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

### HTTP/HTTPS

The integrated web server allows viewing  
the status of the equipment.

### TCP / UDP

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

### Connectors

1xTNC for the GNSS antenna input  
or  
1xSubD9 for the ICD-060 or NMEA input  
1x SubD25 for the time code outputs  
1 x USB for serial console link  
1 x RJ45 network connection

### Network Interface

Ethernet IEEE 802.3. 10/100/1000

### 1 PPS output

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

### Programmable outputs

- **IRIGB outputs**

**IRIG B00x**  
Not modulated (B00x)

- **STANAG TIME CODE**

The following time codes are available

- ICD-GPS-060
- STANAG 4372 / iii Message
- STANAG 4430 (XHQ) Message
- NMEA ZDA

### Internal reference

OCXO type Oscillator, 10 MHz

#### Free running mode:

Short term stability:  
1s < 2.10-11  
10s - 100s < 2.10-11  
Long term stability:  
1 day < 2.10-10  
1 month < 5.10-9  
1 year < 3.10-8

#### Locked running mode:

Long term stability: < 5.10-11

### Console

USB compliant  
Console for configuration & maintenance

### Temperature

Temperature: 0 ° 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: 90-264VAC / 47-63Hz  
Power consumption: <20W 230VAC 50Hz

### Certification:

Certified Hardware CE, ROHS and ITAR free

### Dimensions:

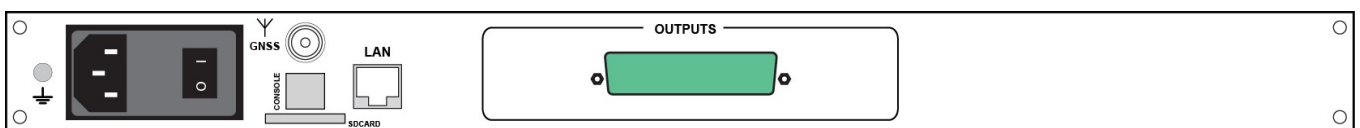
Standard 19" 1U with Depth of 350 mm  
Rack 1U 19" L=483 x I=350 x H= 44 mm

### Weight

< 3 kg

### MTBF:

> 100 000 h



Back Panel (Example: TMG5121)

### Commande code:

TMG5121: GNSS synchronisation

TMG5122: ICD-060 synchronisation

TMG5123 : NMEA synchronisation

Please contact us for any further options needed

