

TMG512x

X= 1 to 5

Time Code Generator

- STANAG 4372 / 4430
- ICD-GPS-060 HQ
- IRIG-B00x
- 1PPS, NMEA ZDA
- 8 outputs

Possible synchronization source:

- TMG5121: GNSS
- TMG5122: ICD-GPS-060 HQ
- TMG5123: NMEA (ZDA)
- TMG5125: IRIGB DCLS/ AFNOR 87500

8 outputs, programmable in factory among:

- 1PPS
- IRIG-B00x
- Have Quick ICD-GPS-060
- STANAG 4430/4372
- NMEA ZDA

Electrical interfaces (configurable in factory):

- RS422 (default)
- TTL
- ICD-GPS-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 outputs can be configured amongst IRIG-B00X, 1 PPS, ICD-GPS-060 HQ, 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 an extremely UTC high precision for the second reference pulse.

ICD-GPS-060 HQ Synchronization

The TMG5122 is synchronized by an ICD-GPS-060 HQ time code over RS422 and its ICD-GPS-060 1PPS.

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
- IRIG-B00X
- STANAG 4430 (XHQ)
- STANAG 4372 (iii)
- NMEA ZDA

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

Oscillator

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

When disciplined by the GNSS, the long term stability remains better than 5×10^{-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 running on each client for its synchronization with the server.

Remote monitoring

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

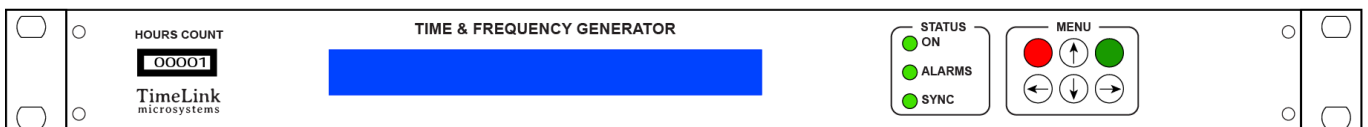
- The SNMP standard protocol (MIB provided)
- A web interface using HTTP or HTTPS
- A proprietary UDP or TCP protocol adding control features

Configuration

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

Options

- 2nd power supply AC / DC
- Choice of possible OCXOs/Atomic clock
- Independent LAN outputs (max 4)
- 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 monitoring and controlling of the equipment.

TCP / UDP

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

Connectors

- 1xTNC for the GNSS antenna input or 1xSubD9 for the ICD-GPS-060 HQ or NMEA input
- 1x SubD25 for the 8 time code outputs
- 1 x USB for serial console link
- 1 x RJ45 network connection

Network Interface

Ethernet IEEE 802.3. 10/100/1000

Configurable outputs:

- **1 PPS outputs**

Accuracy of ± 100 ns relative to UTC when locked to GNSS

- **IRIGB outputs**

IRIG-B00x
Non modulated IRIG-B signal

- **STANAG TIME CODE**

The following time codes are available

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

Internal reference

OCCO type Oscillator, 10 MHz

Free running mode:

- Short term stability:
- 1s < 2.10-11
- 10s - 100s < 2.10-11
- Long term stability:
- 1 day < 1.10-9
- 1 month < 3.10-8
- 1 year < 2.10-7

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, Reach, ITAR free & EAR 99

Dimensions:

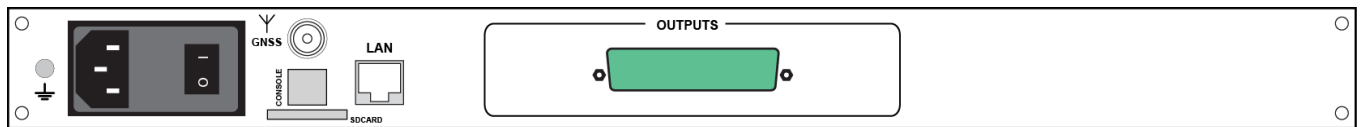
Standard 19" 1U with Depth of 350 mm
Rack 1U 19" L =483 x I =350 x H= 44 mm

Weight

< 3 kg

MTBF:

> 100 000 h



Back Panel (Example : TMG5121)

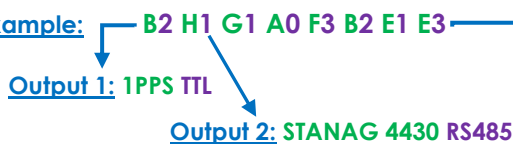
Order code: TMG512x where X=1 to 5

- TMG5121: GNSS synchronisation
 - TMG5122: ICD-GPS-060 HQ synchronisation
 - TMG5123: NMEA synchronisation
 - TMG5125: IRIGB DCLS / AFNOR 87500 synchronisation
- Please contact us for any further options needed

THE 8 OUTPUTS ARE CONFIGURABLE: Performed only in factory
a 16 digits code is representing the configuration of the SUBD 25 output connector for each of the 8 outputs

- It is composed of:
- a **Letter**, indicating the type of output signal
 - a **Number**, indicating the electrical format of the output

Outputs code example:



Letter	Output signal
A	OFF, no signal
B	1PPS
C	IRIG-B002
D	IRIG-B006
E	NMEA ZDA
F	ICD-GPS-060 HQ
G	STANAG 4372 HQIIA
H	STANAG 4430 XHQ

Number	Electrical format
0	Not configured
1	RS485
2	TTL
3	ICD-GPS-060