

# TMG3050

## GNSS & NMEA disciplined IRIGB time & frequency generator

The TMG3050 is a GNSS disciplined time & frequency generator specifically designed for low noise applications. The equipment is housed in 1U 19" standard case. GNSS signal or NMEA 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 unmodulated signal IRIGB00x (DCLS) on a RS485 serial link. 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  $\pm 5 \times 10^{-11}$  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 TMG3050 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.

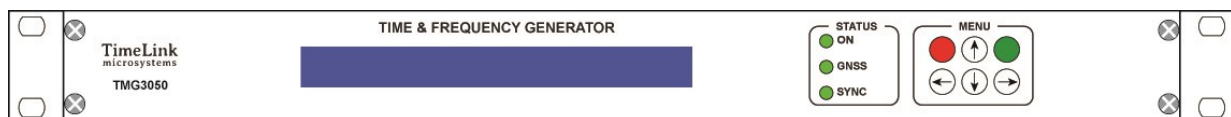
### Remote control

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

- The SNMP standard protocol (MIB provided)
- A proprietary UDP or TCP protocol
- An internal web server

### Configuration

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



TMG3050 front panel

## Specifications

### Outputs

#### 1 PPS output

1 output  
TTL level

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

#### IRIGB outputs

**IRIG B00x 1 output**

No modulated (B00x)  
RS422/RS485 interface

#### 10 MHz Outputs

4 outputs

Level +5 dBm  $\pm 1$  dBm, 50  $\Omega$

**Guaranteed** Phase noise:

1 Hz	<-95 dBc/Hz
10 Hz	<-125 dBc/Hz
100 Hz	<-142 dBc/Hz
1 KHz	<-145 dBc/Hz
10 KHz	<-150 dBc/Hz
100 KHz	<-150 dBc/Hz
1 MHz	<-150 dBc/Hz
Spurious :	< -80 dBc
Harmonics :	< -40 dBc

#### Internal reference

OCCO type Oscillator, 10 MHz

**free running mode:**

Short term stability:	
1s ..10s	< 1.10 <sup>-12</sup>
100s	< 2.10 <sup>-11</sup>

Long term stability:

1 day	< 1.10 <sup>-11</sup>
1 month	< 1.10 <sup>-9</sup>
1 year	< 1.10 <sup>-8</sup>

**locked running mode:**

Long term stability: < 5.10<sup>-11</sup>

### GNSS receiver

Time dedicated receiver with TRAIM.  
Bi-constellation GPS/GLONASS  
<  $\pm 50$  ns / UTC

### 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 outputs for 1PPS  
1 x BNC for 1PPS input  
4 x BNC outputs Frequency 10MHz  
SUB'D 1 x 9-pin female for serial console  
1 x 9-pin female SUB'D for output IRIG B002  
1 x 9-pin female SUB'D for NMEA input  
SUB'D 1 x 9-pin female to output the output "AUX" optional  
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:

CE mark: Safety & EMC, WEEE, 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.

#### SNMP

(Simple Network Management)  
(RFC 1155, 1157, 1213) V2c  
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) or "request / response" mode (TCP).

#### Dimensions:

Standard 19" 1U with Depth of 350 mm

#### Weight:

< 3 kg

#### MTBF

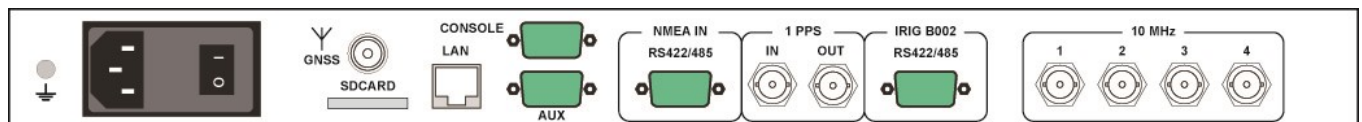
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### OPTIONS:

#### OPT1: NMEA

Output frames in standard NMEA GGA and RMC Emission at 4800 baud, 1 time per second on connector "AUX" DB9.

Electrical interface RS232



TMG3050 rear panel

### Ordering code

TMG3050: Standard model

TMG3050 Opt1: NMEA output