TMG5021

Time Code Generator:

UTC, CD, 1PPS, IRIG-B

Frequency Generator

- 10MHz

- 8 programmable outputs

Multi sources synchronization: GNSS, IRIG-B12, External PPS

Low noise 10 MHz output (long term stability <1x10^{-10})

8 programmable outputs (1PPS, IRIGB (up to 4 UTC, up to 4 CD), 10MHz

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

Easy software update through embedded SDCard

NTP V4

Services

- ***SYSLOG***
- ***802.1X***
- ***SSH***
- ***RTC***

Able to access to some function thru the front panel

TMG5021 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 IRIGB (4 UTC time and 4 count down time), 1 PPS, 10MHz, adjustable 1 PPS (signal shape).

The equipment is housed in 1U 19" standard rack

GNSS

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

Irig-B generator

The equipment includes an IRIG time code generator that allows to provide:

- An IRIGB12x signal (amplitude modulated analog signal) on both outputs.
- An unmodulated signal IRIGB00x (DCLS).

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

Multi-source synchronization (IRIGB12X, GNSS, PPSIN)

The equipment synchronizes on the available input source: GNSS, IRIGB12X or PPSIN.
Source priority can be setup.

Oscillator

An internal OCXO type oscillator provides a 10 MHz frequency used to maintain time. The stability of this oscillator is better than 1x10^{-9} per day in case of loss of external time sourcing.
When disciplined by the GNSS, the long term stability remains better than 5x10^{-11}.

NTP Service

The TMG5021 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:

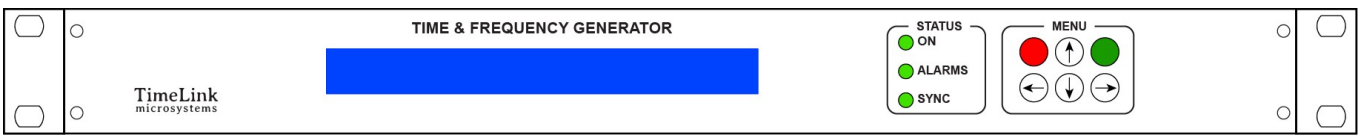
- SNMP standard protocol (MIB provided)
- A web interface using HTTP or HTTPS
- A proprietary UDP or TCP protocol

Configuration

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

Options

- 2nd power supply AC / DC
- Internal pilot
- Please call us for any further option requested



TMG5021 front face

Specifications

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/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

1 x TNC for the GNSS antenna input
1x BNC output for 1PPS
8 x BNC output for programmable outputs: 1PPS, IRIG B12x, IRIG B00x, 10MHz & digital frequencies
1 x USB for serial console link.
1 x RJ45 network connection
1 x BNC input for 1PPS
1 x BNC input for IRIGB IN

Network Interface

Ethernet IEEE 802.3. 10/100/1000

PPS output

TTL level. Accuracy of ± 100 ns relative to UTC when locked to GNSS.

Programable outputs

• IRIGB outputs

Selectable format on both types of outputs: standard, B12X, or IEEE1344
IRIG B12x
Modulated code (B12x): up to 8V ±0.5 V peak-peak 1/1: 1/3 ratio isolated by transformer. BNC connectors (analog)
IRIG B00x
No modulated (B00x)
DCLS interface

• 10 MHz Outputs

Level +13 dBm ±1 dBm, 50 Ω
Guaranteed Phase noise:

1Hz	-90 dBc/Hz
10Hz	-110 dBc/Hz
100Hz	-130 dBc/Hz
1 KHz	-140 dBc/Hz
≥ 10KHz	-145 dBc/Hz

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:

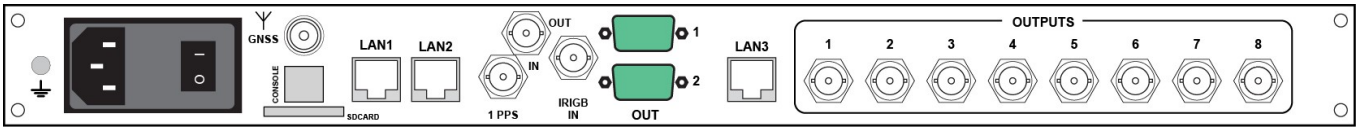
Standard 19" 1U with Depth of 350 mm
Rack 1U 19" L =483 x l =350 x H= 44 mm
OPT01: Standard 19" 1U with Depth of 400 mm

Weight

< 3 kg

MTBF :

> 100 000 h
> 150 000 h with OPT1



TMG5021 back face

Commande code:

TMG5021: Standard
TMG5021 OPT01: 2 power supplies option (with 400mm depth rack)
TMG5021 OPT02 « HOLDOVER » : specific pilot for improved holdover