

TMG2100

PPS & NMEA disciplined time & frequency generator

The TMG2100 is a PPS & NMEA disciplined time & frequency generator specifically designed for low noise applications. The equipment is housed in 1U 19" standard case.

External synchronisation

It is made by:

- A 1PPS reference signal for phasing and disciplining of the internal oscillator
 - A NMEA time frame (ZDA or GGA) for the synchronization of the internal time
- In the absence of an external time source, a manual update is possible via remote management!

Irig-B generator

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

- an IRIGB12x signal (amplitude modulated analog signal) on one output.

NTP Service

The TMG2100 provides 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.

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.

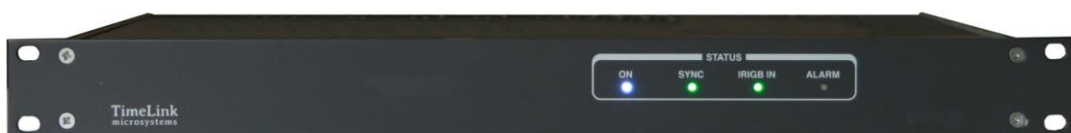
When disciplined by the GNSS, the long term stability remains better than 1×10^{-10} .

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.



TMG2100 front panel

Specifications

NTP

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

HTTP

The integrated web server allows to
view the status of the equipment.

Connectors:

1 x BNC input for 1PPS external
reference
1 x BNC outputs for local 1PPS
1x BNC outputs for IRIG B122
1 x BNC outputs Frequency 10MHz
1xSUB'D 1 x 9-pin female for serial
console
1 x 9-pin female SUB'D for input for
NMEA frame
1 x RJ45 network connection

Network interface

Ethernet IEEE 802.3. 10/100 Base TX.

1 PPS accuracy

TTL level
 ± 100 ns with regards to the external
reference when disciplined by the
external reference.

IRIGB outputs

Modulated code (B12x) : $4V \pm 2V$
peak-peak 1/1: 1/3 ratio isolated by
transformer.

10 MHz Outputs

Level +13 dBm ± 1 dBm, 50 Ω

Guaranteed Phase noise:

1Hz <-85 dBc/Hz
10Hz <-105 dBc/Hz
100Hz <-125 dBc/Hz
1 KHz <-140 dBc/Hz
Spurious : <- 80 dBc
Harmonics : <-20 dBc

Internal reference

OCXO type Oscillator, 10 MHz

free running mode:

Short term stability:
1s ..10s < 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: < 1.10⁻¹⁰

Spurious: < -80 dBc
Harmonics: < -40 dBc

Power supply:

230V AC mains supply:
EEC socket 2P + with filter & On / Off
switch voltage: 85-264VAC / 47-440Hz
Power consumption: <20W 230VAC
50Hz

Dimensions:

Standard 19" 1U
Depth of 350 mm

Weight:

< 3 kg

MTBF

> 100 000 h