TimeLink
microsystems

TMG1200
GNSS and IRIGB table disciplined time & frequency generator

The TMG1200 is a GNSS/IRIGB disciplined time & frequency generator designed for a wide range of applications.

The equipment is housed in a table box. GNSS/IRIGB signal is used for long term disciplining of the internal oscillator.

GNSS synchronization

The internal GNSS receiver is a specific receiver dedicated to time application. It's a bi-constellation model able to acquireboth GPS and GLONASS satellites simultaneously. It delivers a very high precision UTC second reference pulse.

IRIGB synchronization

The input IRIGB signal is an amplitude modulated analog signal (B12X code) GNSS synchronization is selected first because of its better long term stability.

IRIG-B generator

The equipment includes an IRIG time code generator that allows providing an IRIGB122 signal (amplitude modulated analog signal) and an IRIGB002 (DCLS) over RS422.

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

Oscillator

Oscillateur 10 MHz 1 ppm
When disciplined by the GNSS, the long term stability remains better than 1×10^{-9}.

NTP Service

The TMG1200 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 to10ms. 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 an internal web server

Configuration

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

TMG1200 front panel

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Specifications

Outputs

1 PPSoutput

TTL level
Accuracy of ± 100 ns relative to UTC when locked to GNSS.
Accuracy of ± 500 ns relative to IRIGB when locked to IRIGB.

IRIGB outputs

IRIG B122
Modulated code (B12x): 3V ±0.5 V peak-peak 1/1: 1/3 ratio isolated by transformer. BNC connectors (analog)
IRGB 002 (DCLS) TTL (0/5V)

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 for IRIGB122 input (isolated)
1 x BNC for IRIGB122 output (isolated)
1 x BNC for IRIGB002 output (isolated)
1 x BNC for 1PPS output (isolated)
1 x SUB'D 1 x 9-pin female for serial console
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:

DC 9-15V power supply (AC converter provided)
Power consumption: <7W 12V DC

Certification:

Certified Hardware CE, 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.

TP (Time Protocol) - DAY TIME

Time (RFC 868) over port UDP37

HTTP

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

Dimensions:

Table box 160 x 100 x 80 mm

Weight:

<0.9 kg

MTBF

>100 000 h

TMG1200 rear panel

Ordering code

TMG1200: Standard model