GIB-USC NTP Server

PRODUCT PRESENTATION

Latest data acquisition systems found in hydrographic and oceanographic applications are structured around Ethernet links used to connect computers and payloads/sensors. Some of these payloads do interfere with one another. Sharing a unique accurate time reference becomes an obligation, not only to time stamp the acquired sensors data ; but also to trigger the various payloads in order to avoid interference.

ACSA's GIB-USC NTP Server has been specially designed to bring a powerful solution to those two requirements.

Our product is designed to deliver a high accuracy GPS time to all nodes on the network through a TCP/IP protocol.

GIB-USC NTP Server

Simultaneously, a set of 8 trigger lines can be used to control, with an accuracy better than one tenth of a millisecond, time windows associated to specific equipment such as, at the surface: an acoustic modem, an USBL, a towed sonar, ... or in an unmanned vehicle : a positioning equipment, an INU, some acoustic payloads, data telemetry, …

A very stable clock is used to maintain automatically GPS time while the vehicle is submerged.

The GIB-USC NTP Server product is provided with a software toolbox for equipment configuration and payloads trigger lines optimization.

APPLICATIONS

The applications of the GIB-USC NTP Server are numerous. A surface version can be used to deliver GPS Time to a large number of work stations, while controlling specific equipment using time windows techniques. In AUVs, same functionality is offered even when the vehicle is fully submerged. The clock is so accurate that it can also be used to trigger acoustic positioning equipment such as ACSA's GIB portable tracking system.

KEY FEATURES & BENEFITS

Main features and benefits of GIB-USC NTP Server are :

- Generation of ultra stable clock signals synchronized on GPS time, even when GPS satellites are lost (GIB-USC-1-A only),
- Synchronization on GPS time : 10-6 sec (drift max 2.10-8),
- Management of 8 external trigger lines to control payloads time windows,
- NTP Time server function,
- GPS NMEA Frames server.

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ACSA Underwater GPS

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GIB-USC NTP Server

ACSA Product References

- GIB-USC-1-A Board version - Vehicle unit (with ultra-stable clock),
- GIB-NTP-1-A Packaged version

- GIB-USC-1-B Board version - Surface unit (without ultra-stable clock).
- GIB-NTP-1-B Packaged version

All unit are delivered with software tool kit.

Equipment Functionality

This equipment is designed to ensure the following functions :

1. Generation of ultra stable clock signals synchronized on GPS time, even when GPS satellites are lost (Vehicle unit only),
2. Synchronization on GPS time : 10^{-6} sec (short term drift max 2.10^{-8}, long term ~1.10^{-9} / Day),
3. Management of 8 external trigger lines to control payloads time windows,
4. NTP Time server function,
5. GPS NMEA Frames server.

Digital Inputs / Outputs

In only

TTL in 1 : GPS 1 PPS

Out only

Serial out : Time synchronized on GPS (NMEA-183 data frame)
TTL out 1: GPS 1 PPS
TTL out byte: 8 payloads external triggers opto-isolated lines

In & Out

Serial 2 in/out : GPS NMEA Frames & GPS receiver configuration
Serial 3 in/out : Host commands and respond data frames

RJ-45 : Ethernet 10/100 Mbps

LEDs : GPS NMEA frames receive
PPS rising edge
Power supply OK

Power supply

Power : 5 VDC / 220 VAC
Power consumption : ~ 2 W

Commands

Triggers configuration
Return board configuration status byte
NTP Time enquiry TCP/IP

Dimensions

Unit : 265 x 112 x 51 mm

Board only : PC-104.

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