

Miniature GPS/IRIG Position/Time Code Reader and IRIG B/G Generator Module with Real Time Clock and Multiple Battery Backup Options



Description

The MGPS-101G module provides IRIG-B/G time code capability as well as GPS position, velocity and course data to the MEDAU/MCDAU/MWDAU-2000 miniature data acquisition unit. The module can be placed in either a master or remote unit operating at up to 20 Mbps and will provide time code capability for the modules within that particular stack, allowing per-word or per-message time tagging capability for I/O modules in the stack that acquire bus data (e.g. 1553, ARINC-429, RS-232, etc.). All encoded time words furnished by the MGPS-101G module comply with IRIG-106-96, Chapter 4 requirements for “high time”, “low time” and “micro time” formats. The MGPS-101G receives time and position signals from an integral GPS receiver every 200 ms (5 updates per second) and can also accept external IRIG-B, AC or DC time signals via dedicated input pins. Any of these inputs may be designated as the module’s selected time source which is then used to generate IRIG-B AC and IRIG-B/G DC time code outputs for cascading purposes. The MGPS-101G module also includes an on-board Real Time Clock (RTC) with a variety of battery backup options, enabling the unit to provide actual time of day when the selected GPS or IRIG time source is unavailable. The RTC automatically re-synchronizes itself to the module’s selected time source once it becomes available. Also on-board is an ADC for measuring and encoding the internal system temperature and voltage rails within the host stack. In addition, the MGPS-101G provides an RS-232 (UART) interface for output of time, position and module status data in ASCII format. This interface can also be used to jam time into the unit when the selected time source (GPS, IRIG-B AC or IRIG-B DC) is unavailable.

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MGPS-101G Datasheet

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Specifications subject to change without notice.

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Features

- GPS/IRIG time code reader/generator module
- Compatible with MEDAU/MCDAU/MWDAU-2000 systems operating at up to 20 Mbps
- Integral GPS receiver
- Accepts IRIG-B AC or DC inputs
- Time compatible with IRIG 106-96
- Generates IRIG-B, AC and DC outputs
- Generates IRIG-G, DC outputs
- Use for frame time tagging, bus word time tagging
- Generates status words for transmission in PCM
- Provides Latitude, longitude, altitude, velocity and course data
- New position/velocity/course data every 200 msec. (5 updates/sec.)
- On-board Real Time Clock (RTC)
 - Provides actual time when GPS/IRIG time source is unavailable
 - Automatically re-syncs to GPS/IRIG time every 10 sec
- Battery backup provisions for RTC
 - 250 mA-h primary Li cell module on internal daughter board
 - 1000 mA-h primary Li cell in MBBU-2001 module
 - VBATT voltage rail, supplied by external battery
- Seamless “Flywheel mode” operation (runs on internal oscillator) when selected GPS or IRIG time source is unavailable
- RS-232 (UART) interface
 - Provides output of position, time and status in ASCII format
 - Can be used to jam time when GPS/IRIG time is unavailable
- Windows based setup software included

Applications

- Flight test instrumentation
- Wideband testing, structural analysis, ...
- Physical research and experimentation



CAIS
Compatible



Management
System
AS9100C
ISO 9001:2008

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