



**GPS-LC-8** is the low cost apparatus of the Time-Frequency product line. Thought to maintain the high performance of signal synchronization but with a price unbeatable in the market.

**GPS-LC-8** is a multi-output time-frequency (PPS, 10 MHz) reference generator; the high stability is obtained through tuning algorithms controlled by GPS receiver. In the standard version there are 8 independent outputs of the 10 MHz frequency reference and 8 outputs of the time reference PPS (Pulse Per Second).

**GPS-LC-8** is extremely flexible in all applications where it is necessary to provide a time-frequency reference to multiple device simultaneously, ensuring complete electrical isolation. Each of the 8 outputs 10 MHz and of the 8 outputs PPS is constantly monitored to notify any kind of anomalies such as short circuits cable's disconnections.

Upon the occurrence of failure, are given a series of electrical signals and generated the respective SNMP traps. It's particularly easy to use both for installation and maintenance. All functions are completely accessible both locally, through an LCD display on the front, and remote through communication on Ethernet 10/100 with TCP/IP protocol.

**GPS-LC-8** provides guidance on its operating status including through the use of 7 dry contact placed on the back of the apparatus. It's fully standardized to SNMP protocol which provides all the informations on the electrical state of the apparatus and of the GPS receiver. The device is equipped with double power supply and it's realized in rack 19" 1U version.

- High-stability inner oscillator OCXO with a full frequency drift of  $\pm 1 \cdot 10^{-10}$  free run day operation,
- 12 channels GPS receiver with automatic tracking and timing's error management system,
- New design DPLL fast lock,
- 8 independent sine wave outputs at 10 MHz frequency with 13 dBm power level each,
- 8 PPS outputs with TTL level terminated at 50 Ohm,
- Ethernet interface for NTP synchronization,
- Device supply in logical OR,
- Electrical/Serial signaling system to exchange unit,
- AC 85 Vac - 265 Vac 50/60 Hz,
- DC 12 Vdc - 48 Vdc,
- Removable drawer container 130x220x38 mm.

**Frequency reference**

Signal: 10 MHz sine wave.  
Spectral purity: -70 dBc at full output power. (harmonics), -75 dBc at full output power (non-harmonics).  
Phase noise: -130 dBc at 1 kHz.  
Outputs: 8 independent.  
Output level: 13 dBm each output.  
Output impedance: 50  $\Omega$ .  
Output connectors: BNC.  
Stability: 1e-12 daily average OCXO locked at GPS in SA.  
OCXO Standard: 1e-10 daily average OCXO in free run, OCXO SC: 2e-11 daily average OCXO on free run.

**Time reference**

Signal: 1 PPS, 100  $\mu$ s Duty, Rising Edge.  
Output: 8 independent.  
Output level: TTL 5 Vpp, Square wave.  
Output impedance: 50  $\Omega$ .  
Output Connectors: BNC.

**GPS section**

Receiver: 12 Channels L1 1575.42 MHz.  
Tracking: correlation over 12 satellites.  
PPS precision: < 50 ns on SA.  
Antenna connector: TNC.  
Capture time: < 4 min.

**NTP Section**

Protocol: NTP Version 4  
Role: NTP Server  
Precision: < 10 ms  
Stratum: 1

**Signaling**

Serial connection: RS-232 Connector DB9 Male  $\pm$  15 kV (ESD).  
Network connection: Ethernet interface 10/100, TCP/IP protocol.  
Signaling: 7 dry contact over Weidmuller connector step 3.5 mm.  
Remote: 4 photo-coupled contact over Weidmuller connector step 3.5 mm.

**Supply**

Network: 85 Vac – 265 Vac, Plug IEC320 integrated, filter EMI/RFI.  
Battery: 2 independent power suppliers.

**Size**

Width: 1 Unity 19".  
Depth: 300 mm connectors excluded.  
Weight: 1.5 Kg.