LL-3525

GPS Synchronized Time Tranfer Unit

Datasheet V 1.2

Key Features:

- Synchronize unit to GPS and take accurate GPS time where GPS is not available and antenna cables cannot be laid easily (e.g. on ships)
- Transportation of accurate time better than +/- 100 nanoseconds relative to UTC (depending on the oscillator integrated)
- Operating controls and status indicators on the front panel
- Display with status and time information
- Handheld and portabel chassis (HxWxD) 115 mm x 120 mm x 234 mm
- Timecode: HaveQuick (GPS-060)
- 1PPS output

LL-3525
GPS Synchronized Time Transfer Unit

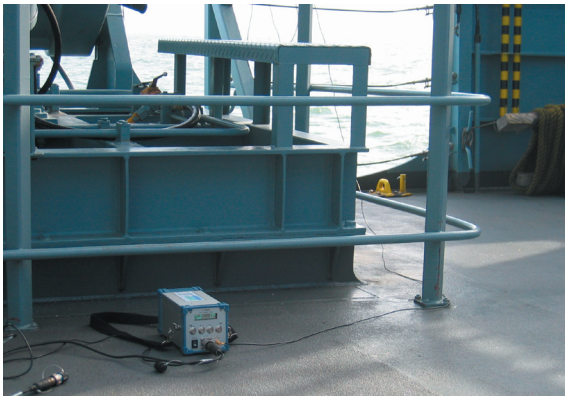
Description:

The LL-3525 is a GPS Synchronized Timecode Generator. The unit distributes time information based on the Global Positioning System (GPS). The reveiver used is a 12 channel timing receiver. Timecode is HaveQuick (GPS-060).

Options:

Oscillator: from the standard TCXO (1x10E-6 aging) to Rubidium Oscillator

Time Codes: HaveQuick



LL-3525
in the field

LL-3525 GPS Synchronized Time Tranfer Unit

Specifications:

Internal Time Base

Oszillator:
TCXO
Stability:

Warm-up:	±5 x 10-7 /1min
Long term:	±8 x 10-8 /per day (after 24h operation) ±7 x 10-7 /per year (after 24h operation)

Optional OCXO, +-1 x 10E-9 or Rubidium Oscillator available

Output

Timecode Output
1 (one) HaveQuick output is part of the basic unit.
Optional Timecode outputs on request.

HaveQuick Timecode:	GPS-060
Level	RS485

1(one) 1PPS output is part of the basic unit.

Input

GPS Antenna

Frequency	1575,42 MHz (L1)
Bandwidth	± 1.023 MHz
Polarization	Right hand circular
Impedance	50Ω
Power	4,75 to 5,25VDC
Current	15mA typical 25mA maximum
Connector	SMA

GPS Receiver

Receiver Architecture
12 parallel channels
U 1575,42 MHz
C/A code (1.023 MHz Chip rate)
Code plus carrier tracking (carrier aided tracking)

Tracking Capability
12 satellites simultaneous

RF Characteristics of Receiver

Dynamic Range	27dB
Saturation	-110dBm

Performance of the Receiver

Accuracy

Position	<5m rms
Velocity	<0.02ms-1
Latency	<200ms
1pps	30ns rms accuracy, >10ns resolution

Dynamic Limits

Max Velocity	515 ms-1
Max Altitude	18000m
Max Acceleration	4g

Warm-Up Time
The system is fully operational after the GPS receiver has locked. An operation of more than 20 minutes will improve flyweel timing performance.

Electrical

Input power
+48 VDC nominal
(-36,...,-75 VDC)
Max. 350mA

Battery:

Typ:	Lithium Ion Battery
Nominal Voltage:	10.8V
Nominal Capacity:	7,2 Ah

Connectors

Anenna:	SMA
Input Power, HaveQuick Out:	20FB35PN MIL -D38999

Environmental

Temperature

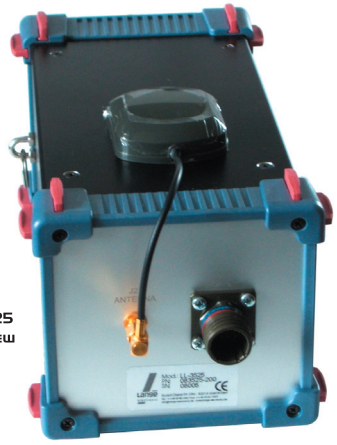
Operating	-0°C – 55°C normal Operation

Humidity:
up to 95% relative (non condensing)

Chassis

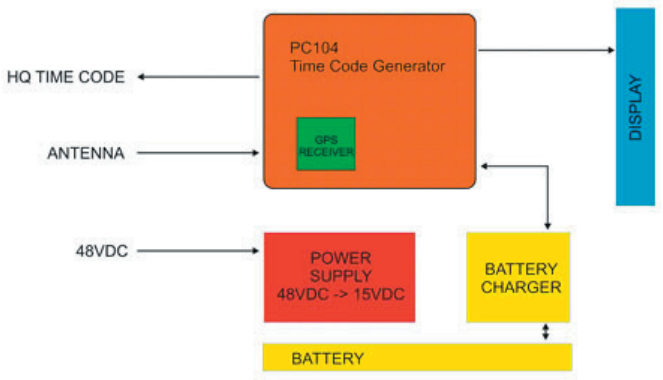
(HxWxD) 115 mm x 120 mm x 234 mm

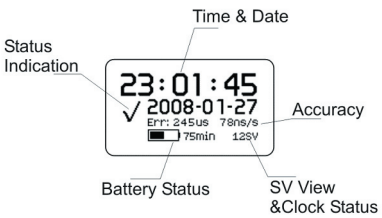
LL-3525 sideview



LL-3525 rearview

LL-3525 configuration





LL-3525 display

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