OSA 4530 Low Noise

Highly Compact GPS and Low Noise Synchronization Receiver

Introduction

The existing and emerging standards in the world of mobile telecommunications and digital broadcasting demand the highest quality of synchronisation.

A proper timing signal therefore becomes more and more important for media centres as well as for cellular networks where location services such as E911 will have more importance.

Oscilloquartz has built the engine of its highly successful OSA GPS product range into a single casing format complete with an integrated power supply (12V or 24V / 48V), so as to provide a flexible Time & Frequency solution to customers requesting a highly compact single input/output timing unit or needing a one traffic channel retiming unit.

The unique architecture of the OSA 4530 LN is designed to maintain the strict CDMA holdover specifications. The OSA 4530 LN is also a natural choice as a synchronisation source for UMTS, WCDMA and cdmaOne, as well as GPRS, CDMA and TDMA base station and mobile switches. It is 1 PPS and 10MHz outputs make it ideal for synchronizing DAB/DVB equipment.

The OSA 4530 LN provides 1 PPS, 10 MHz and TOD (Time Of Day) outputs referenced to UTC[1]. A highly accurate oven-controlled oscillator filters the reference signal and provides a holdover quality comparable to that of an SSU in case of loss of external reference.

Control software

The OSA 4530 LN is manageable via the OSA Control and Monitoring (CM) software that gives full control on all their functionalities via an intuitive MS-Windows based graphical user interface.

The OSA 4530 LN features an alarm relay contact which allows to activate a local or remote alarm system when no serial management link is available.

1: when the system is locked on GPS

Highlights

- Economic, reliable and compact
- UTC-derived timing information through:
  - UTC-locked 1 PPS output
  - TOD compliant to NMEA0183
- Integrated high stability holdover functionality:
  - Frequency stability < 1 x10^{-10} /day (typical)
- Very low 10 MHz output phase noise

Typical Applications

- GPS-based synchronisation for cellular networks like UMTS, GPRS and CDMA
- GPS-based for mobile base stations
- Synchronization of DAB and DVB equipment
- Specialised ATM and LAN/WAN sync requirements
- Sync sources for test equipment and instruments

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OSCILLOQUARTZ
SWATCH GROUP ELECTRONIC SYSTEMS

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Typical Characteristics

Performance when locked to GPS-signal:

- 1 PPS accuracy: < 100 ns pp (at constant temp.)
  < 150 ns pp (at variable temp.,-5°C to +55°C)
- ADEV < 10^{-12} (10'000 seconds)

Output signals specifications:

- 1 PPS: 200ms width, < 20ns rise time, 2.5 Vpp/50 Ω
- 10 MHz: 1 Vrms sine, 50 Ω

Phase noise L (f) (BW=1Hz)

1Hz	- 95 dBc
10Hz	-125 dBc
100Hz	-140 dBc
1KHz	-145 dBc
10KHz	-150 dBc
10KHz	-150 dBc

Connectors:

- BNC

Power Supply:

- 9-18 VDC or 20-60 VDC
- Optional 96-260 VAC external power supply

Management:

- RS -232C on DB9 connector
- 1 alarm relay contact
- TOD (Time-Of-Day) output compliant to NMEA0183
- GUI-based Configuration and Monitoring software
- Central Management from SyncView™ *Plus* with UMI (Universal Management Interface)

Hold-Over performances:

- Long term stability : $1x10^{-10}$/day, $2x10^{-8}$/year
- Frequency stability: $6x10^{-10}$ pp (-5°C to +55°C)

Antenna Cables (connectors included):

- 20 meters (RG58)
- 60 meters (RG213)
- 120 meters (2x60 meters RG213, with 1x120m with line amplifier)

Environmental characteristics (OSA 453x GPS-SB):

- Operational: -5°C to +55°C (other on request)
- Storage: -40°C to +85°C
- Humidity: 95% non-condensing
- CE mark: EN50081/ EN50082 / EN60950
- Constructed for working under harsh conditions, as described in ETS 300-019-2-3.2

Physical Dimensions:

- Physical (HxWxD): 50,8mm(2")x101.5mm(4")x127.0mm(5")
- Optional : 19" / ETSI mounting kit

GPS Input:

- Frequency: L1 (1'575 MHz)

19" mounting kit:

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