OSA 4500 OEM Clocks

GPS-based High Precision Clocks providing very High Stability and Accurate Frequency and Phase to the host system

Introduction

The OSA 4500 provides higher grade synchronization at minimal cost and minimal space.

Based on the high performance Double Oven Oscillator OSA 8663, up to four 1 PPS and four 10 MHz outputs deliver time and frequency at a high level of accuracy and stability.

Enhanced with its Aging and Temperature Drift Compensation (ATDC) system, the OSA 4500 becomes the most stable GPS quartz clock ever seen in holdover mode, especially in large temperature variations environment and harsh conditions.

Numerous types of integration can be accommodated thanks to the OSA 4500 versatility, to easily adapting any integration into base stations, broadcast stations and such equipment, as an OEM timing clock solution.

Functions

The OSA 4500 time and frequency is derived from the Global Positioning System (GPS). Up to 12 satellites can be tracked and a "position fix" mode is automatically trigged to reach higher stability.

When no valid GPS reference input is available, the OSA 4500 enters in holdover mode and holds its output frequencies to supply long hours of frequency and phase accuracies. With ATDC system implemented, the OSA 4500 provides superior holdover stability, reaching phase variations lower than 5µs per day.

A comprehensive command set via RS232 serial line is available for the OSA 4500 management, allowing alarm reporting and full equipment control.

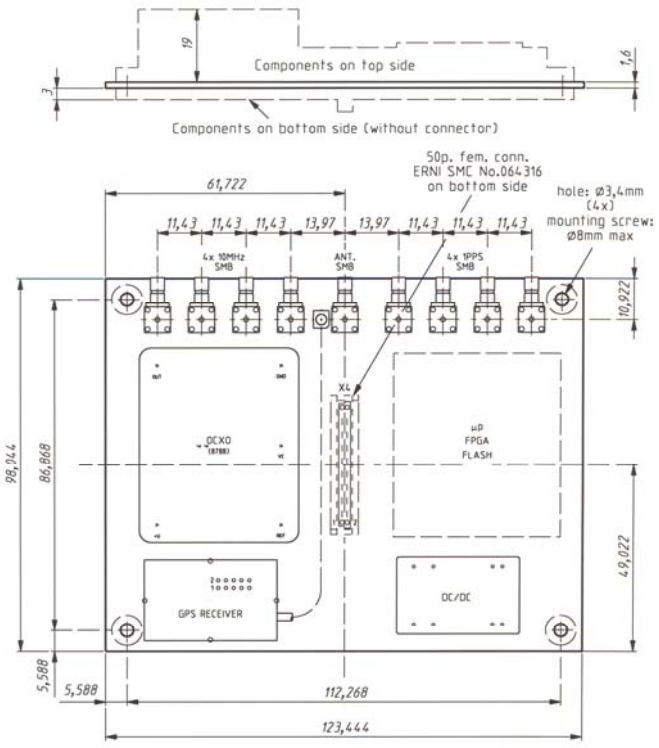
The OSA 4500 is also very easy to integrate, highly reliable and totally maintenance-free.

Highlights

- High frequency stability and long term accuracy, both GPS-locked and Holdover mode
- Economic, reliable and highly compact board level integration
- 1 to 4 1PPS and 10MHz outputs of each type, avoiding the host equipment a useless and noisy distribution / amplification stage
- Phase alignment of all outputs within ±10ns with "0 crossing" 1PPS / 10MHz
- Quick and easy integration thanks to a wide range of connectivity, such as board to board, ribbon cable or coax connectors
- Available in several Oscillator choices, providing different degree of accuracy, low phase noise, stability & holdover capability
- Optional PPS input instead of GPS

Typical Applications

- Base stations: WIMAX, WIBRO, 3G and 4G
- Broadcasting: DAB, DVB-T/DVB-H and DTV



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OSCILLOQUARTZ
SWATCH GROUP ELECTRONIC SYSTEMS

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Typical Characteristics

Outputs

1 to 4x 10 MHz sine outputs :

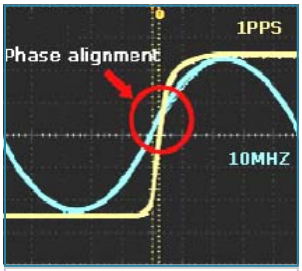
- 0.5 or 1 VRMS ± 30%, Sine wave, 50Ω or LVCMOS
- Short term stability (with OCXO 8663):
  0.2 sec to 10 sec @ <1x10-11

1x 10 MHz square output :

- 2.4 or 3.3 VPP, LVCMOS, 50Ω

1 to 4x 1PPS outputs:

- 2.4 or 3.3 VPP, Square, 50Ω (others opt.) or LVCMOS
- Rise Time: < 20ns



Phase alignment of 1PPS and 10MHz outputs with "0 crossing" in both tracking and holdover modes

Power supply

- 12 VDC ±5%
- 12 Watts at warm-up, 8 Watts steady state (at 25°C)

Management

- RS-232C local management
- Alarm dry contacts
- 1x or 4x TOD (Time-Of-Day) outputs compliant to NMEA-0183
- GUI-based Configuration and Monitoring software
- Field upgradeable

Environmental Characteristics

- Operating temperature: -5 to +55°C (-20 to +70°C in option)
- Storage temperature max.: -40° to +85°C
- Humidity: 5 to 95% non condensing

Hold-Over performances

OCXO	8663 ATDC	8663	8788	8625
Long term stability (Freq. Var. per day)	3x10-11	1x10-10	2x10-10	1x10-09
Thermal stability* (Freq. var. peak-peak over full temp. range)	2x10-10	6x10-10	2x10-08	5x10-08

*Related to each specific OCXO's operating temperature range

Antenna cable

Choice of antenna cables:

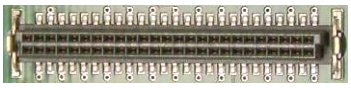
- 20m
- 60m
- 120m (w/amplifier)
- up to 4km (Optical antenna kit)
- other length on demand

Connectivity

SMB, SMA or MCX (angle or Straight)

- 1 to 4x 1PPS, 50Ω outputs
- 1 to 4x 10MHz, 50Ω outputs
- 1x GPS antenna, 50Ω input

ERNI SMC-B 50 poles female



- For Board to Board or flat cable connection (available on top side and/or back side of PCB)
- 12 VDC power supply and GND
- 4x 1PPS and 4 x 10MHz sine-wave outputs
- 1x 10MHz LVCMOS
- 4x Alarm opto-couplers (collector/emitter)
- Rx/Tx management port (RS232 or LVCMOS)
- 4x additional TOD outputs (RS232 or LVCMOS)

Mechanical

Size (H x W x D):

- 28,6 x 123,4 x 98 mm (OCXO 8663)
- 23,6 x 123,4 x 98 mm (OCXO 8788)
- 18,6 x 123,4 x 98 mm (OCXO 8625)

Bespoke configurations with attractive price for volume order:

Number of outputs, type of connectors, lower grade oscillator when Holdover capability is relaxed.

Actual features and performance depends on chosen/offered factory options: oscillators, fixed or mobile position, connectivity, firmware options.

Oscilloquartz SA reserves the right to change all specifications contained herein at any time without prior notice.

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