OSA STAR GLONASS

GLONASS + GPS board level High Precision Clocks

Introduction

The OSA STAR GLONASS+GPS offers combined GLONASS and GPS signal reception to supply highly reliable synchronization clock from the two world's largest Global Navigation Satellite System (GNSS); the renowned Global Positioning System (GPS) and the promising Russian Federation's **GL**Obal **NA**vigation **S**atellite **S**ystem (GLONASS).

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 STAR becomes the most stable GPS quartz clock in holdover mode ever, especially in large temperature variations environment and harsh conditions.

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

Functions

The OSA STAR time and frequency is derived from GPS and GLONASS thanks to its embedded 24-channel receiver.

When no valid GNSS reference input is available, the OSA STAR enters in holdover mode and holds its output frequencies to supply long hours of frequency and phase accuracies. With ATDC system implemented, the OSA STAR 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 STAR management, allowing alarm reporting and full equipment control.

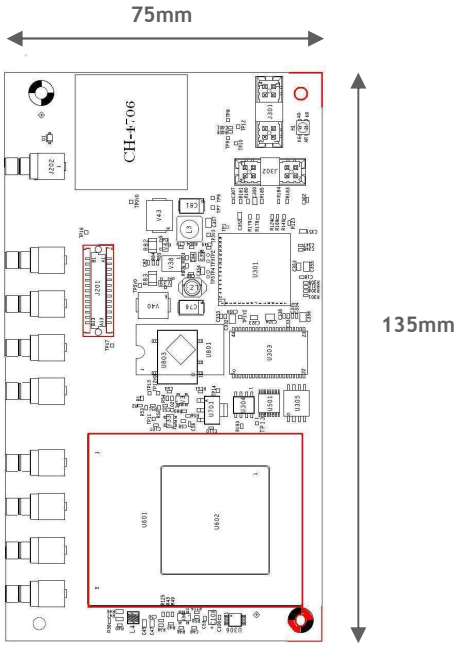
The OSA STAR is also very easy to integrate, highly reliable and totally maintenance-free.

Highlights

- GLONASS and GPS operation supported
- High frequency stability and long term accuracy, both GNSS-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
- Available in several Oscillator choices, providing different degree of accuracy, low phase noise, stability & holdover capability
- Optional PPS auxiliary input

Typical Applications

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



developed by

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Typical Characteristics

Outputs

1 to 4x 10 MHz sine outputs :

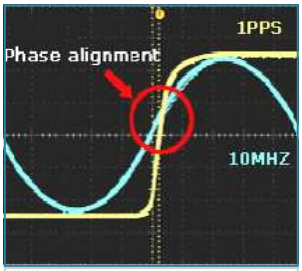
- 0.5 or 1 VRMS ± 30%, Sine wave, 50Ω or LVCMOS

1x 10 MHz square output :

- 2.4 or 3.3 VPP, LVCMOS

1 to 4x 1PPS outputs:

- 2.4 or 3.3 VPP, Square, 50Ω (others opt.) or LVCMOS



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 TOD (Time-Of-Day) output compliant to NMEA0183
- GUI-based Configuration and Monitoring software

Environmental Characteristics

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

Holdover performances

OCXO	8663 & ATDC	8663	8716	8625
Long term stability (Freq. Var. per day)	3x10E-11	1x10E-10	2x10E-10	1x10E-09
Thermal stability* (Freq. var. peak-peak	2xE10-10	6x10E-10	1x10E-08	5x10E-08

*Related to each specific OCXO's operating temperature range

GLONASS - GPS system

- **24 channels**
- **GLONASS**: L1-range (1592-1610 MHz), CT-code
- **GPS**: (L1-range 1575.42 MHz), C/A-code
- **Cold Start**: 90 sec.
- **Sensitivité**: -155 dBW

Antenna cable

Choice of antenna cables:

- 10m
- 20m
- 60m
- 120m (w/amplifier)
- other length on demand

Connectivity

SMB or MCX (angle or Straight)

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

ERNI SMC-B 26 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
- 1x 1PPS and 1 x 10MHz sine-wave outputs
- 1x 10MHz LVCMOS
- 4x Alarm opto-couplers (collector/emitter)
- Rx/Tx management port (RS232 or LVCMOS)
- 1x additional TOD outputs (RS232 or LVCMOS)

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

Customized configurations can be offered with attractive prices for volume orders.

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

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