Product Overview

The OSA 5210 Telecom GNSS Clock is a high-performance Primary Reference Time Clock (PRTC) for telecommunication network operator applications. With its integrated and programmable Global Navigation Satellite System (GNSS) receiver, the OSA 5210 is capable of referencing the world's two largest GNSS systems GPS and GLONASS, either individually or in parallel. The software-selectable auxiliary timing input interface enables network operators to ensure continuous and precise synchronization when no GNSS signal is available by connecting to a remote timing source.

Meeting Stringent Accuracy

The OSA 5210 provides synchronization with outstanding stability and accuracy when locked to a GNSS source. Its sophisticated clock engine and the digitally controlled internal quartz oscillator ensure that frequency, phase and Time-of-Day (TOD) output signals meet the highest precision available in the industry. The OSA 5210 offers extended holdover capability during time periods when no valid input reference is available. Thanks to the embedded double-oven controlled quartz oscillator (DOCXO), the OSA 5210 supplies highly accurate frequency and phase information over many hours when GNSS signals are interrupted. The addition of a DOCXO therefore extends frequency and phase holdover performance. This flexibility allows network operators to better optimize the stability and accuracy of their entire timing infrastructure.

Simplified Operations

The OSA 5210 is fully software upgradeable and configurable while in service. It provides a complete implementation of Synchronization Status Messaging (SSM) including all input and output interfaces in compliance with industry standards and proven telecom practice. All alarms and events, system configuration, input priority selection as well as additional settings can be managed locally from its intuitive Graphical User Interface (GUI). The OSA 5210 alternatively supports remote management by integrating the device into Oscilloquartz's comprehensive synchronization management system SyncView™Plus, or from any SNMP compatible management platform.

Flexible Configuration Options

The OSA 5210 comes with two blocks of four factory configurable output interfaces. Available configuration options are 2.048MHz compliant with ITU-T G.703-13, 2.048Mbit/s (E1) compliant with ITU-T G.703-9, 10MHz sine wave and 1PPS phase-locked to UTC. This flexibility and the ultra-compact size make the OSA 5210 a versatile high-performance GNSS clock for all applications in fixed and mobile telecommunication networks where size and flexibility matters.

Features & Benefits

- GNSS synchronization clock for GPS, GLONASS or GPS+GLONASS operation

- Software-selectable auxiliary input interface

- Flexible programmable output interfaces

- Timing accuracy of 100ns when locked to GNSS

- Holdover accuracy of 1 x 10-10/day with DOCXO oscillator

- TOD output interface and optional NTP server

- Synchronization Status Messaging support

- Integrated SNMP and SyncView™Plus remote management

Technical Information

Input Interfaces

GNSS Input Interface
- BNC 50Ω connector
- GPS: L1 1575.42MHz, C/A
- GLONASS: L1-range 1598.0625 – 1609.3125MHz, CT
- 24 GPS/GLONASS channels

Software-Selectable Satellite Tracking Operation Modes
- GPS, GLONASS or GPS+GLONASS

Software-Selectable Auxiliary Input Interface
- 1 x 5MHz, 10MHz, 2.048MHz, 1PPS or 2.048Mbit/s

Output Interfaces

8 x Synchronization Output Interfaces (Factory Configurable)

Output Interface 1 to 4
- 2.048MHz, BNC 75Ω unbalanced or SUB-D 120Ω balanced, G.703-13
- 2.048 Mbit/s (E1), BNC 75Ω unbalanced or SUB-D120 Ω balanced, G.703-9, HDB3, AMI, CAS, CRC4 configurable
- 10MHz sine wave, 1VRMS ±20%, BNC 50Ω unbalanced (only 1 when SUB-D/120Ω are used for E1/2.048MHz)

Output Interface 5 to 8
- 2.048MHz, BNC 75Ω unbalanced or SUB-D 120Ω balanced, G.703-13
- 2.048 Mbit/s (E1), BNC 75Ω unbalanced or SUB-D 120Ω balanced, G.703-9, HDB3, AMI, CAS, CRC4 configurable
- 1PPS, phase-locked to UTC, 2.4VPP ±20%, BNC 50Ω unbalanced (only 1 when SUB-D/120Ω are used for E1/2.048MHz)

TOD Output Interface
- TOD on RS232, RJ45, conforming to NMEA0183
- Optional NTP Server, RFC1305, 10/100BaseT, RJ45 (instead of TOD on RS232)

SSM (Synchronization Status Messaging)
- SSM reading on 2.048Mbit/s (E1) inputs
- Input selection based on SSM
- SSM on 2.048Mbit/s (E1) outputs

Performance When Locked to GNSS

Timing Accuracy
- < 100ns peak-to-peak (tracked in fixed-position mode)
- ADEV < 10–12 (20,000 seconds)

Holdover Performance (Frequency)

OCXO 8663 Version (ITU-T G.812 type I/III)
- Long term frequency stability: 1 x 10-10/day, ±2.0e-8/year
- Frequency over temperature: 6 x 10-10pp (-5°C to +55°C)

Power Supply
- Dual power ports -20 to -60VDC power supply
- 20W max. consumption

Alarms
- 1 x open/closed relay contact

Management

Local Management
- Physical port: RS-232C, RJ45 (CM-Software GUI)

Remote Management
- 10/100 Base-T, RJ45 physical port
- TL1 + SNMP V1
- SyncView™Plus Network Manager

Environmental Characteristics
- Operational: -5°C to +55°C
- Storage: -40°C to +85°C
- Humidity: 95% non-condensing

EMC, ESD & Safety
- EMC: Certified to EN55022:2005 and EN55024:2005
- Safety: Conformance to EN60950-1: 2001

Mechanical
- Size (H x W x D): 1U 44.52 x 482.6 x 220mm (1.75"x19"x8.7")
- Weight: 2 kg

Antenna System
- Choice of GPS antenna or GLONASS+GPS antennas

Standard Available Cable Lengths
- 10m, 20m, 60m, 120m LMR 400
- Line amplifier, LMR 600 cable or GPS optical antenna options for longer distances
- Other lengths on demand