

## OSA 5330 PTP Grandmaster - IEEE 1588 v2

### Features

- IEEE 1588-2008 (v2) Time protocol
- Distributes frequency, phase and time-of-day to remote PTP clients and slaves over a network
- Advanced hardware-generated timestamps
- GPS input source
- $\pm 100$  ns timing accuracy when locked to GPS
- Highly stable internal oscillator maintain accurate synchronization in holdover
- Auxiliary outputs include 1PPS, 10MHz, 2.048 MHz, NMEA 0183, IRIG-B and NTP
- 19 inch 1U high rack mountable chassis

### Applications

Typical applications are synchronizing

- 2G, 3G, LTE, CDMA2000
- WiMAX
- DAB, DVB and DTV
- Ethernet Backhaul
- Passive Optical Networks (PON)
- Circuit Emulation Services
- Electrical Power Utilities



The Precision Time Protocol (PTP) is a solution for the distribution of synchronization over IP-based packet networks such as IP, IP/MPLS, Ethernet, IP/xPON and IP/xDSL networks. Brandywine offers a comprehensive range of PTP products covering all synchronization needs in the telecommunication domain.

The OSA 5330 PTP Grandmaster is designed to operate with the OSA-5320 PTP Slaves or from other vendors. The OSA 5330 PTP Grandmaster consists of a GPS-receiver and a PTP engine delivering PTP service over an Ethernet port.

An absolute timing accuracy of better than 100 nanoseconds to UTC can be achieved using this protocol as it uses hardware-generated timestamps. The OSA 5330 uses an internal Quartz Crystal oscillator disciplined by an integrated GPS receiver as a highly stable time base. The use of precision oscillator options provides improved stability in holdover mode when the input source is interrupted for any reason.

The front panel has a large alphanumeric LCD, status indicator and 5-segment button for easy status and minimal configuration. The main configuration and monitoring is through a secondary network port providing web access. So-called PTP Profiles are used to configure those parameters which are crucial for the interoperability with the connected slaves. A range of additional output options are available, including serial, pulse, Timecode and frequency - please contact our sales support team for more information.

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## Technical Specifications

### GPS-receiver Section

**Frequency:** 1575.42 MHz L1 C/A code  
**Tracking:** 12 channels

### Choice of antenna cables

LMR-400: 50', 100', 150', or 330' with line amp  
Other Length: upon request

### Alternative Auxiliary Inputs

**Frequency:** 1x 10 MHz, 1.2 Vrms, BNC 50  $\Omega$   
1x 2.048 MHz, G.703, BNC 75  $\Omega$   
**Phase:** 1x 1PPS\*, 2.0 Vpp, BNC 50  $\Omega$   
**Time-of-day:** 1x NMEA 0183\*, RS-232, SUB-D 9p.

### Internal Oscillator

**Holdover freq. stab.:** 1x10-10/day, ITU-T G.812 type III  
**Holdover phase drift:** 10  $\mu$ s/day  
**Best performance:** < 1x10-11/day, ITU-T G.811  
(when locked to GPS) < 50 ns phase accuracy

### PTP Master port

**Protocol:** IEEE 1588-2008 (Version 2)  
**Network port:** Ethernet 10/100 Base T, RJ45  
**PTP profile:** User configurable  
**IP Configuration:** DHCP or Fixed IP  
**Communication:** Unicast, Multicast or Mixed  
**TWTT method:** 1-step or 2-step mode  
**Compliance:** 3rd-party PTP Slave  
**PTP Time accuracy:** < 100 ns when locked to GPS

### Auxiliary Outputs

**Frequency:** 1x 2.048 MHz, G.703, BNC 75  $\Omega$   
or RJ-48 120  $\Omega$   
1x 10 MHz sine, 0.5 Vrms, BNC 50  $\Omega$   
**Phase:** 1x 1PPS, 1.8 Vpp, BNC 50  $\Omega$   
**Time-of-day:** 1x NMEA 0183, RS-232, SUB-D 9p.  
1x IRIG-B DCLS, 3 V (1.5 V @ 50  $\Omega$ ),  
BNC 50  $\Omega$   
1x NTP v3, DAYTIME, TIME, RJ45

### Front panel indications

- 40x2 character LCD. Provides initial configuration
- 5-button keypad
- Status LED

### Management and User Interface

#### Local / Remote Management

- 1x Independent Ethernet 10/100 BaseT, RJ45
- HTTP - Web interface for configuration and monitoring
  - SNMP\* v1 enterprise MIB
  - DHCP or fixed IP
  - Firmware upgrade
  - SyncView Plus NMS compliant
- 1x Alarm dry contact

### Power Supply

#### Dual DC Power Supply

**Voltage:** -40 to -60 V DC  
or

#### Single AC Power Supply

**Voltage:** 60 to 240V AC  
**Frequency:** 47 to 63 Hz

### Mechanical

Size (W x H x D): 19" x 1U x 10"  
Weight: >10lb typical

### Environmental Conditions

**Operating cond.:** 0°C to +50°C  
**Storage cond.:** -40 °C to +85°C  
**Humidity:** up to 95% non-condensing  
**Safety:** EN 60950-1  
**EMC & ESD:** EN 61000-6-3, EN 61000-6-1



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



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