

OSA 5320 PTP Slave

Stand-alone PTP - IEEE 1588-2008 Slave clock supplying highly stable Frequency, Phase and Time-of-Day synchronization signals

Introduction

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. PTP is also known by the name of the corresponding standard IEEE 1588-2008.

Oscilloquartz offers a comprehensive range of PTP products covering all synchronization needs in the telecommunication domain. The OSA 5320 PTP Slave is designed to operate with PTP grandmaster clocks from Oscilloquartz or from other vendors.

The OSA 5320 consists of a PTP protocol engine which connects to one or several distant PTP Grandmaster clocks over an IP or Ethernet network.

The PTP Slave is a high performance synchronisation clock solution delivering frequency, phase and time-of-day over a set of output ports featuring a variety of output formats using Precision Time Protocol (PTP) over an Ethernet network.



Typical Applications

- Typical applications are the synchronization of 2G, 3G, cdma2000 and WiMAX base stations, of xPON optical line terminals, of DAB, DVB and DTV transmitters, etc.
- PTP allows the distribution of accurate frequency, phase and time-of-day to these applications even in cases where the transport network is asynchronous.
- The typical PTP architecture consists of a PTP Grandmaster clock which delivers synchronization to a number of PTP slave clocks.

Highlights

- Delivers highly economic end-to-end frequency synchronization
- Frequency accuracy better than 10 ppb possible using Gigabit switches
- Precision timing circuits ensure stability in the event of synchronisation signal interruption.
- Slave system time accuracy better than 1 microsecond using Gigabit switches
- Configuration and alarm reporting capabilities using HTML and SyncView Plus
- Time-of-day (TOD) is provided using IRIG-B and NMEA 0183

Benefits

- Powerful network delay analysis delivers full time alignment over hostile networks (including Layer 2 and Layer 3 routing).
- Manual or automatic best master clock selection
- No need to install GPS antennas
- 2.048 Mbit/s and 2.048 MHz synchronization clock signal for legacy equipments
- Multicast & Unicast operation ideal for use in Telecoms environment

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Typical Characteristics

Three OSA 5320 Solutions

Three versions of the OSA 5320 PTP are available:

- Telecommunication (synchronization of BTS/NodeB)
- Broadcasting (synchronization of DVB/DAB transmitters)
- Power utilities (applications requiring time-of-day)

Synchronization Outputs

Outputs	Telecom	Broadcast	Power utilities
Output quantity	5	5	5
E1/T1/2.048 MHz	2	-	-
10 MHz sine wave	1	2	-
1PPS	1	2	2
IRIG-B DCLS	-	-	1
IRIG-B AM	-	-	1
TOD - NMEA 0183	1	1	1

Frequency

- Telecom output, BNC 75 Ω , configurable by software:
 - 2.048 MHz, ITU-T G.703
 - 2.048 Mbit/s, ITU-T G.703, G.704, G.781
 - 1.544 Mbit/s, ITU-T G.703, G.704, G.781*
- 10 MHz sine wave, 1 Vrms, BNC 50 Ω , ± 10 ns phase aligned to 1 PPS

Phase

- 1PPS: 2.5Vpp, BNC 50 Ω

Time-Of-Day

- IRIG-B000 DCLS: IEEE 1344, 2.5 Vpp +/- 0.1 Vpp, BNC 50 Ω
- IRIG-B12x AM: IEEE 1344, 2.5 Vpp +/- 0.1 Vpp, BNC 50 Ω
- NMEA 0183: GPRMC message format, RS-232 via RJ-45

Network Connections

PTP slave

- Protocol: IEEE 1588-2008 (Version 2)
- Network port: Ethernet 10/100BaseT, RJ45
- PTP profile: User configurable
- Supported:
 - Unicast, Multicast and Mixed
 - Acceptable master table
 - 1-step or 2-step mode
 - 3rd-party Grandmaster

Holdover performances

Version ITU-T G.812 Type I

- Ageing: 1×10^{-10} / day
- Temp. sensitivity: 6×10^{-10} over temperature range

Version ITU-T G.812 Type III

- Ageing: 1×10^{-9} / day
- Temp. sensitivity: 1×10^{-8} over temperature range

Version ITU-T G.813 Opt. 1

- Ageing: 1×10^{-8} / day
- Temp. sensitivity: 2×10^{-6} over temperature range

Management and User Interface

- 3 status LEDs on front panel
- Local management:
 - RS-232, RJ-45 port
- Remote management:
 - HTML, RJ-45 port
 - Manageable via SyncView Plus NMS

Power Supply

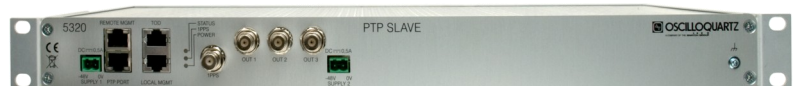
DC Power Supply: -40 to -72 VDC, -48 VDC nominal

Mechanical

Size (W x H x D): 19" or ETSI x 1U x 240 mm
465.5 mm x 44.45 mm x 240 mm

Environmental Conditions

Operating conditions: -5°C to +55°C
Humidity: up to 95% non-condensing
Safety: EN 61010-1
EMC & ESD: EN 50081-1, EN 50082-1
IEC 801 parts 2, 3, 4, 5 and 6



*: contact Oscilloquartz for availability

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

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