

OSA 5320 IEEE-1588/ PTP Slave Clock

The OSA 5320 is a stand-alone PTP slave clock using the Precision Time Protocol (PTP) also known as IEEE 1588 v2



Features

- 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, 2.048 MHz and 1.544 Mbit/s synchronization clock signal for legacy equipment
- Multicast & Unicast operation ideal for use in Telecoms environment

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.

Brandywine 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 Brandywine 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 synchronization 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.

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.

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Technical Specifications

Three Brandywine 5320 PTP Slave Solutions

Three versions of the OSA 5320 PTP are available:

- Telecommunication (synchronization of BTS/NodeB/RNC)
- 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 sinewave, BNC 50 Ω, ±10 ns phase aligned to 1PPS

Phase

- 1PPS: 2.5Vpp, BNC 50 Ω

Time-of-Day

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

PTP Network Connections

Protocol:	IEEE 1588-2008 (Version 2)
Electrical port:	10/100 BaseT, RJ-45
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 Grandmaster
Switching Method:	Acceptable Master Table (AMT), Best Master Clock Algorithm (BMCA)
Performance:	ITU-T G.8261 compliant

Holdover performances

Version ITU-T G.812 Type I

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

Version ITU-T G.812 Type III

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

Version ITU-T G.813 Opt. 1

- Ageing: 1×10^{-8}
- 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

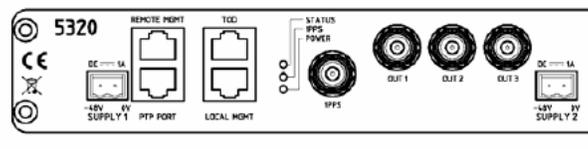
DC Power Supply: -40 to -60 VDC, -48 VDC nominal

Mechanical

Size(W x H x D): (19" or ETSI x 1U x 9.5")
18.3" x 1.25" x 9.5"

Environmental Conditions

Operation temp.:	-5°C to +55°C
Humidity:	up to 95% non-condensing
Safety:	EN 60950-1
EMC & ESD:	EN 61000-6-3, EN 61000-6-1



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