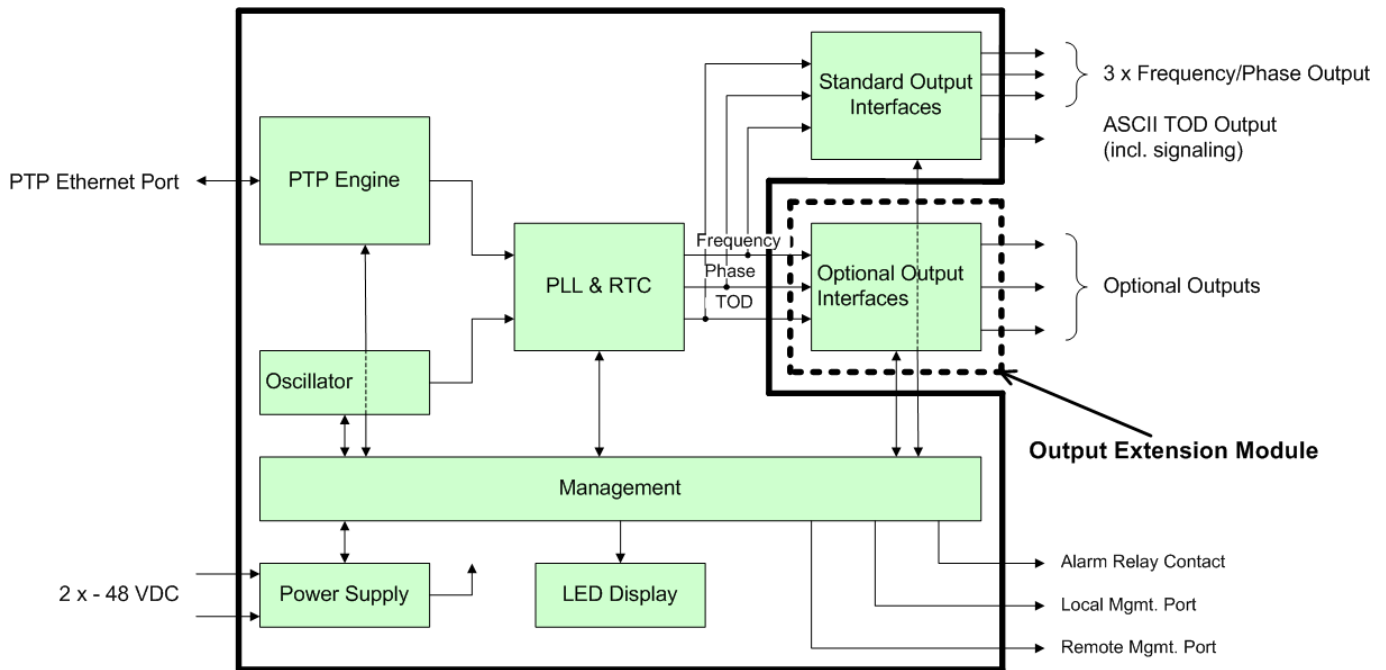# OSA 5320 PTP Slave

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

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.

Highlights

Oscilloquartz offers a comprehensive range of PTP products covering all synchronization needs in the telecommunication domain. The OSA 5320 PTP Slave is designed to interoperate 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 delivers frequency, phase and time-of-day over a set of output ports featuring a variety of output formats. The output port section is divided into a set of standard output ports and a pluggable Output Extension Module.

The OSA 5320 is fully manageable. So-called PTP Profiles are used to configure those parameters which are crucial for the interoperability with the connected grandmaster clock.

Typical Applications

Typical applications are the synchronization of 2G, 3G, cdma2000 and WiMax basestations, of xPON optical line terminals, 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.

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Typical Characteristics

PTP Section

Protocol:

PTP layer:	IEEE 1588-2008 (Version 2)
Lower layers:	UDP/IP/Ethernet

Network port:	Ethernet 10/100BaseT, RJ45
PTP profile:	User configurable
Supported:	- Unicast message negotiation
Options	- Path trace

Internal Oscillator

Option 1

Ageing:	2×10^{-10}/day, 3×10^{-8}/year
Temperature sensitivity:	1×10^{-9} over op. temp. range

Option 2

Ageing:	1×10^{-9}/day, 1×10^{-6}/year
Temperature sensitivity:	5×10^{-8} over op. temp. range

Option 3

Ageing:	1×10^{-8}/day
Temperature sensitivity:	2×10^{-6} over op. temp. range

Standard Output Ports

Frequency & phase:

Number of ports:	4 x BNC unbalanced
Output formats:	Configurable for each port:
	- 1PPS
	- 10 MHz
	- 2.048 MHz, G.703
	- 2.048 Mbit/s, G.703
	- 1.544 Mbit/s, G.703

Time-of-day

Number of port:	1
Output format:	1 x ASCII over RS-232

Output Extension Module

Please contact manufacturer

Front panel indications

Indication:	LED Color:
Power On	Green
GPS-locked PTP	Green
Degraded PTP	Yellow
General	Alarm Red

Equipment management

Local Mgmt.

Port:	RS-232C
Protocol:	TL1
Relay contact:	1 x General alarm indication

Remote Mgmt.

Port:	Ethernet 10/100BaseT, RJ45 (separ. from Ethernet port for PTP)
Protocol:	TCP/IP

Power Supply

DC Power Supply

Voltage:	- 40 to - 60 V DC
Power feeds:	Dual

AC Power Supply	External module
Voltage:	90 to 260 V AC
Frequency:	50 to 60 Hz

Mechanical

Size:	44.5 x 483 x 280 mm
Mounting:	For 19" and ETSI rack

Environmental Conditions

Environmental

Operating conditions:	EN 300 019, class 3.3 (- 25 to 55°C)
Transportation:	EN 300 019, class 2.2
Storage:	EN 300 019, class 1.1

Safety	EN 61010-1
EMC & ESD	EN 50081-1, EN 50082-1 IEC 801 parts 2, 3, 4, 5 and 6 IEC 801 parts 2, 3, 4, 5 and 6

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