syn1588® PTP Stack

Brief Data Sheet

syn1588 ®

Version 1.2 – September 2015

Features

- IEEE1588-2008 compliant
- IEEE1588 hardware timestamping support with syn1588® technology
- Full Master and Slave capability
- Support for E2E, P2P and pure clock syntonization
- One-step (syn1588® hardware) and two-step clock support
- IPv4, IPv6 and Layer-2 (Linux only) transport
- IEEE1588 Management support
- Linux PHC support for operation with compatible NICs
- Unicast operation
- Mixed Mode (multicast / unicast)

Profiles

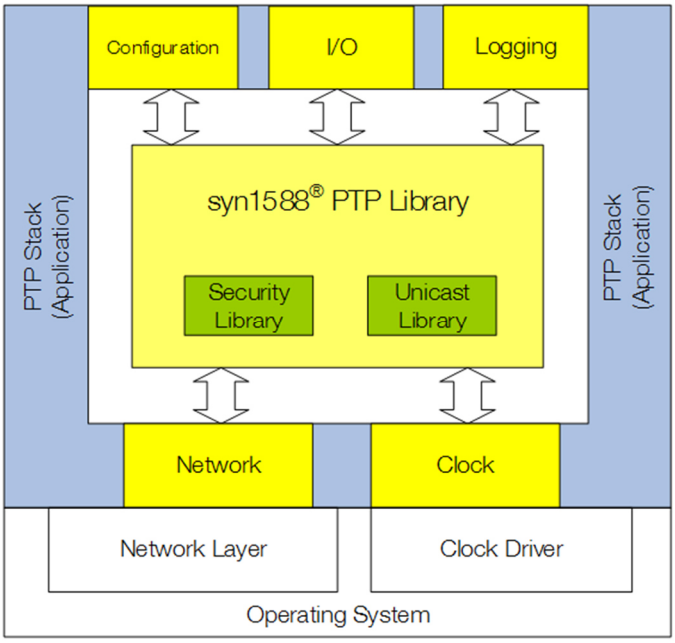
- Broadcasting profiles
  - SMPTE ST2059-2
  - AES-67
- Default profile
  - IEEE1588-2008, Annex J3
- Power Profiles
  - IEEE C37.238-2011
  - IEEE C37.238-2014
- Telecom Profiles
  - T.REC-G.8265.1
  - T.TEC-G.8275.1

Options

- APIs for controlling and monitoring
- Boundary Clock operation

Add-ons

- lsync: synchronizes a local system clock (using syn1588® hardware)
- esync: synchronizes to an external reference with syn1588® hardware



syn1588® PTP Stack block diagram

The syn1588® PTP Stack is a lightweight Precision Time Protocol stack fully compliant to the IEEE1588-2008 standard enabling highly accurate clock synchronization in local area networks. It is designed using a strictly encapsulated software structure combined with distinct interfaces between the various modules of the syn1588® PTP Stack.

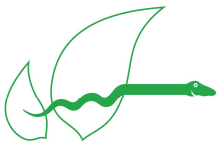
Due to its extensive PTP profile support the syn1588® PTP Stack is ideally suited for a variety of applications ranging from the broadcasting industry to financial service providers. It may act as a Power Profile node as well as a Telecom Grandmaster Clock, depending on the requirements of the target system.

The syn1588® PTP Stack is written as a user space application capable of operating on a standard PC as well as any microcontroller. Windows and Linux operating systems are natively supported. Originally, it has been designed to be used with an Oregano Systems high-accuracy PTP network interface card (syn1588® PCIe NIC). Due to the highly modular software architecture of the syn1588® PTP Stack porting to other platforms is an effortless task. Merely the interfaces to and from the PTP library have to be adapted accordingly to build a syn1588® PTP Stack capable of communicating with 3rd party PTP hardware. For example, the syn1588® VIP single chip device uses such a version of the protocol stack.

All timing critical operations like time-stamping are handled in hardware when using the Oregano Systems network adapters or 3rd party network interface card with Linux PTP Hardware Clock (PHC) support (e.g. Intel 82580 or Intel i350). However, the syn1588® PTP Stack can operate without any dedicated IEEE1588 hardware support as well. In this mode the system clock is used as a time reference.

The syn1588® PTP Stack is a well proven, easy-to-use PTP solution and has been tested successfully for compatibility with various other implementations of other vendors e.g. at every ISPCS plugfest since 2007.

For further details and information like resource utilization, custom solutions as well as optional features, please contact Oregano Systems.



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Technical Specifications	
Standards	IEEE Std 1588-2008 IEEE Std C37.238-2011, IEEE Std C37.238-2014 ITU-T G.8265.1/Y.1365.1 (10/2010), ITU-T G.8275.1 SMPTE ST2059-2
Natively Supported hardware	Oregano Systems syn1588® PCIe NIC (hardware timestamping support) Oregano Systems syn1588® PCI NIC (hardware timestamping support) Oregano Systems syn1588® VIP (hardware timestamping support) Network Interface Cards supporting the Linux PHC interface and the Linux SO_TIMESTAMPING feature (hardware timestamping support) Miscellaneous Network Interface Cards (software timestamping only)
Operating system support	Linux (32/64 bit) Microsoft Windows XP (deprecated) Microsoft Windows Server 2003 (32/64 bit) Microsoft Windows Server 2008 (32/64 bit) Microsoft Windows 7 (32/64 bit) Microsoft Windows 8 (32/64 bit)

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