

PtpTimestampUnit

A low-footprint, highly configurable, PTP Timestamp Unit (TSU), specifically designed for Systems on Chip (SoC). It detects PTP frames on a (R)(G)MII tap or uses the Xilinx® Zynq PTP signals and timestamps PTP event frames based on a Counter Clock and provides them delay compensated to a PTP Software stack (e.g. PTPd, PTP4I, etc.)

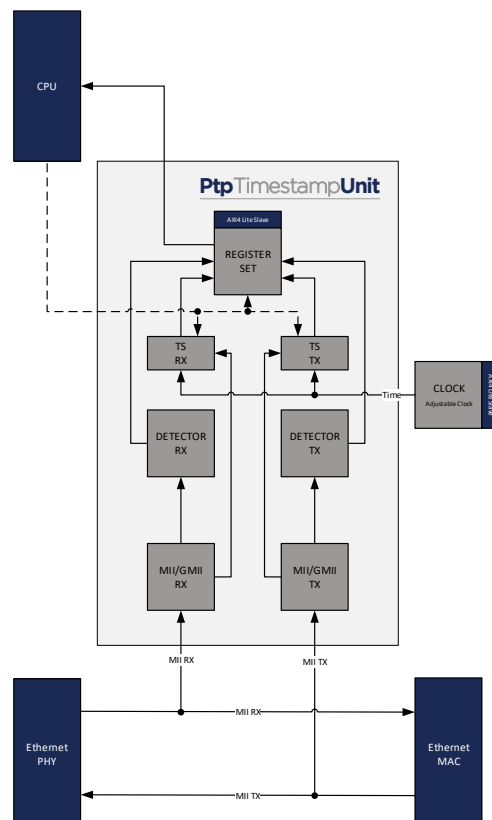
Key Features:

- IEEE1588, IEEE802.1AS TSU
- PHY delay compensation
- Vendor independent
- Layer 2 and Ipv4&6, P2P/E2E
- Unicast PTP
- Optional Buffering
- Axi4 lite slave register interface
- Configurable Interrupt

Typical Applications:

- Ethernet based automation networks
- Robot control
- Substation automation
- Distributed data acquisition
- Test and measurement
- Etc.

IP Core Architecture:



Specification:

IEEE1588	Layer 2 and Ipv4&IPv6, P2P/E2E, Unicast PTP support
IEEE802.1AS	VLAN, Redundancy Tags (HSR/PRP, FRER) support Master and Slave capability Default-, Power- and Utility-profile and IEEE802.1AS support Meta Information extraction for frame matching Configurable Buffers for each frame type PHY Delay compensation
Performance	Full line speed frame handling 10/100/1000 Mbit/s support, taps (R)(G)MII interfaces between MAC and PHY or uses dedicated TS signals (e.g. Xilinx® Zynq)
Portability	Vendor independent, written in plain VHDL Low footprint and low frequency requirements
Accuracy	Sub microsecond synchronization With 50ppm Oscillator: +/- 25ns
Modularity	Modular system; adjustable clock is a separate core Slim and standardized interfaces are used, scalable to more ports
Configuration	Axi4 lite slave support, for status and configuration

Deliverables:

- Ip core in plain VHDL
- Testbench in plain VHDL
- Linux Driver
- Reference Design for Zynq
 - Top level VHDL file
 - Timing Constraint SDC files
 - Vivado Project file
- Linux Driver (MAC & TSU Zynq 70xx)
 - Device Tree example
 - Kernel Config example
- PTP4lwith Makefiles for Petalinux

Related Products:

- | | |
|-------------------------|----------------------|
| • PTP Ordinary Clock | • IRIG Master/Slave |
| • PTP Transparent Clock | • Adjustable Clock |
| • PTP Grandmaster Clock | • Signal Timestamper |
| • PPS Master/Slave | • Signal Generator |



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