# **Ptp**Ordinary**Clock**

A low-footprint, highly configurable, 100% hardware only IEEE1588-2019/2008 Ordinary Clock solution, specifically designed for high-performance distributed systems. Allows running PTP synchronization completely independent and standalone from the user application.
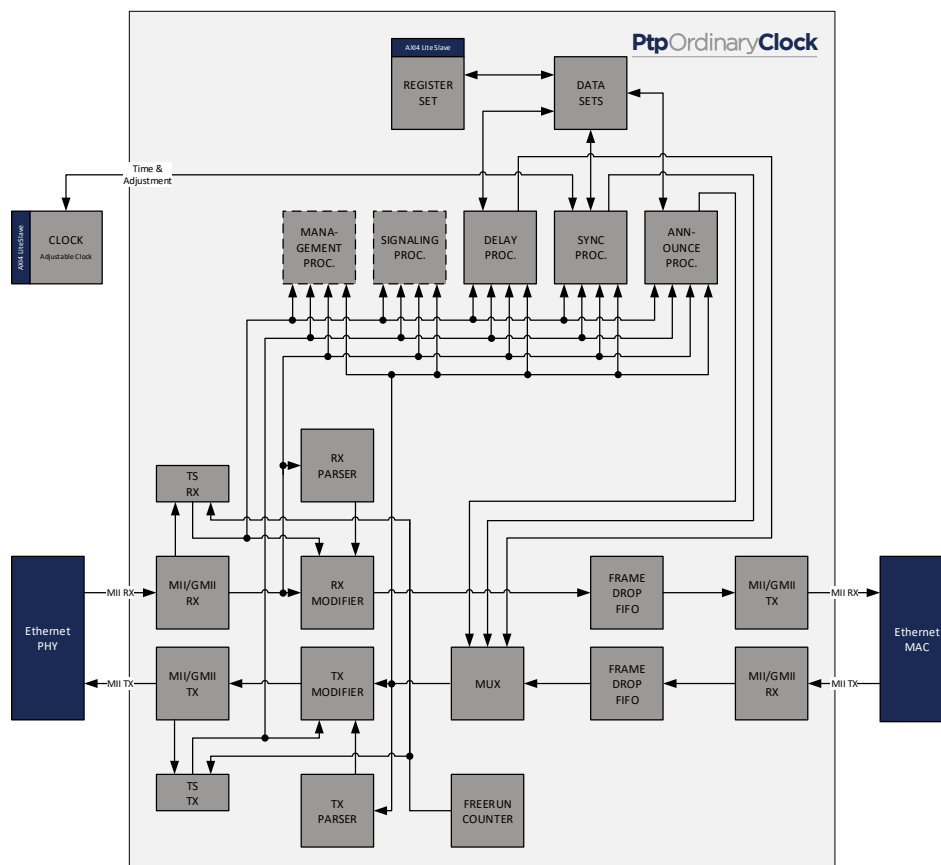
## Key Features:

- IEEE1588-2019/2008 Ordinary Clock
- 100% hardware only solution
- Vendor independent
- Layer 2 and Ipv4&6, P2P/E2E delay mechanism, 1 step clock
- Default-, Power-, Utility-, TSN-, and ITU-profile support

## Typical Applications:

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

## IP Core Architecture:

| | |
|---|---|
| IEEE1588 | Layer 2 and Ipv4&6, P2P/E2E delay mechanism, 1 step ordinary clock, Master and Slave capability, multicast and unicast |
| | Default-, Power-, Utility-, TSN- and ITU-profile support |
| | Complete Dataset support |
| | PTP Management message support |
| | Offset and drift calculation for adjusting the clock |
| Performance | Full line speed frame handling, offloading synchronization |
| | 10/100/1000 Mbit/s support, intercepts (R)(G)MII interfaces between MAC and PHY (no MAC required) |
| Portability | 100% hardware only solution, no dependency on external CPU or PHY features |
| | Vendor independent, written in plain VHDL |
| | Low footprint and low frequency requirements |
| Accuracy | Sub microsecond synchronization |
| | With 50ppm Oscillator: +/- 20ns |
| Modularity | Modular system; adjustable clock is a separate core which can be also synchronized to another source (GPS, IRIG, etc.) |
| | Slim and standardized interfaces are used |
| Configuration | No CPU required, standalone configuration with signals |
| | Axi4 lite slave support, for status and configuration |

## Deliverables:

- Ip core in plain VHDL
- Testbench in plain VHDL
- Reference Design
  - Top level VHDL file
  - Timing Constraint SDC files
  - Vivado/Quartus Project file

## Related Products:

- PTP Transparent Clock
- PTP Grandmaster Clock
- PTP Hybrid Clock
- PPS Master/Slave

- IRIG Master/Slave
- Adjustable Clock
- Signal Timestamper
- Signal Generator

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