

UniversalTimeSync

The Universal Time Sync solution is a combination of all time synchronization cores provided by NetTimeLogic. It can be tailored to specific needs by adding and removing individual cores. It can be used as time bridge between the different time synchronization technologies. Therefore it is especially suited where multiple time synchronization technologies shall be synchronized with each other or legacy components shall be synchronized.

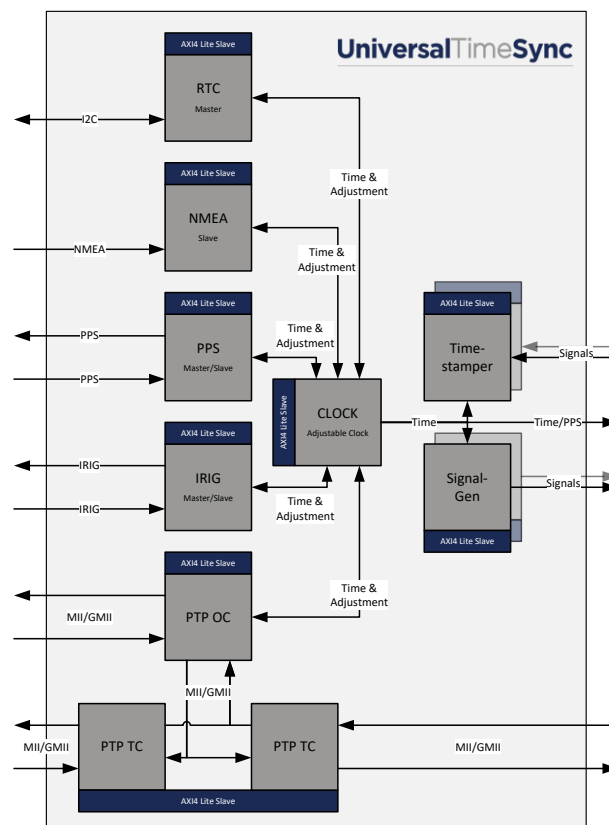
Key Features:

- PTP, IRIG, PPS, NMEA and RTC using the adjustable clock
- Signal time stampers and signal generators
- 100% hardware only solution
- Vendor independent

Typical Applications:

- Ethernet based automation networks
- Time bridge
- Substation automation
- Distributed data acquisition
- Test and measurement
- Legacy component integration

IP Core Architecture:



Specification:

Cores	PTP Ordinary and Transparent Clock cores with Layer 2 and Ipv4, P2P delay mechanism, 1 step support PPS Master and Slave with cable delay compensation and dynamic pulse width IRIG-B Master and Slave with hardware time conversion and cable delay compensation NMEA Slave with hardware time conversion RTC Master with non-volatile time storage Adjustable Counter Clock with PI servos Signal Timestamper and Signal Generator aligned with clock
Performance	Offloading synchronization 10/100/1000 Mbit/s support
Portability	100% hardware only solution, no dependency on external CPU Vendor independent, written in plain VHDL Low footprint and low frequency requirements
Accuracy	Sub microsecond synchronization With 50ppm Oscillator: +/- 100ns (for OC and PPS)
Modularity	Modular system; synchronization cores can be added or removed depending on the needs
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 OC/TC/HC/GM/SO | • IRIG Master/Slave |
| • RTC Master | • Adjustable Clock |
| • NMEA Slave | • Signal Timestamper |
| • PPS Master/Slave | • Signal Generator |



NetTimeLogic GmbH
Synchronization Solutions

Strassburgstrasse 10
8004 Zürich
Switzerland

contact@nettimelogic.com
Tel. +41796716211
www.nettimelogic.com