

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.

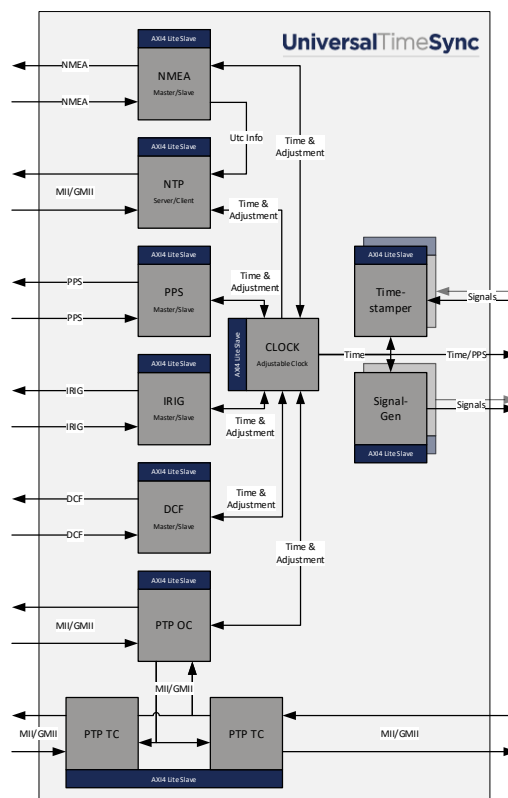
Key Features:

- PTP, NTP, IRIG, PPS, DCF, 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, Ipv4 and IPv6, P2P and E2E delay mechanism, 1 and 2 step support NTP Server handling 100k+ (~500k) requests/s PPS Master and Slave with pulse with encoding IRIG-B Master and Slave DCLS or ACAM NMEA Master and Slave with RMC/ZDA and UBX support RTC Master with non-volatile time storage DCF Master and Slave 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 PTP, IRIG 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:

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|----------------------|----------------------|
| • PTP OC/TC/HC/GM/SO | • IRIG Master/Slave |
| • NTP Server | • DCF Master/Slave |
| • RTC Master | • Adjustable Clock |
| • TOD Master/Slave | • Signal Timestamper |
| • PPS Master/Slave | • Signal Generator |



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