IrigMasterClock

A low-footprint, highly configurable, 100% hardware only IRIG Master Clock solution, specifically designed for high-performance distributed systems. Allows compensating driver circuit delays and time base correction to distribute UTC or TAI time.

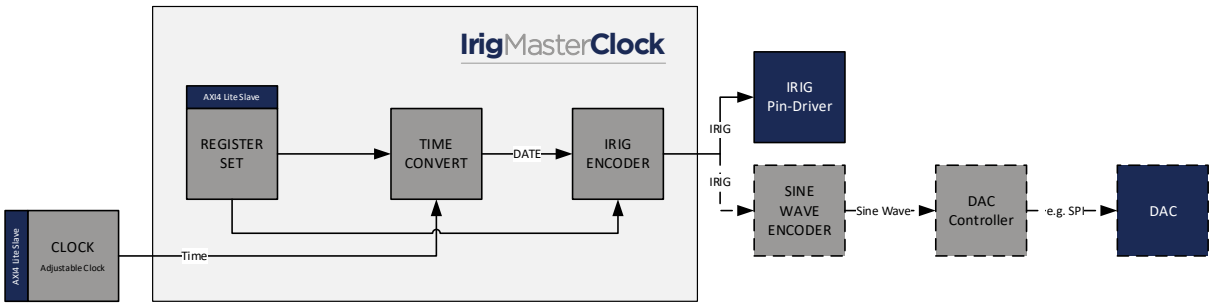
Key Features:

- IRIG-B00x/G006 Master Clock (IRIG-B12x/G14x with DAC)
- Control Bits are user configurable
- 100% hardware only solution
- Vendor independent
- Output delay compensation
- Time base correction
- High precision IRIG generation aligned with local clock

Typical Applications:

- Legacy Networks
- Time converters
- Robot control
- Substation automation
- Distributed data acquisition
- Test and measurement
- Etc.

IP Core Architecture:



Specification:

IRIG	Supports IRIG-B00x/G006 format (IRIG-B007 compatible with B004, B005, B006 and B007 IRIG-B Slaves) PWM and DCLS encoding for IRIG-B00x/G006 AC and AM encoding with DAC for IRIG-B12x and IRIG-G146 (IRIG-G requires >= 1MSPL DAC) Mode can be set to any of the modes IRIG-Bxx0– IRIG-Bxx7 Control Bits for IRIG-Bxx0/Bxx1/Bxx4/Bxx5 configurable Time base conversion from TAI to UTC (or any other time base) Reference Mark Symbol aligned with NetTimeLogic's Clock Output delay compensation
Performance	Accuracy of rising edge IRIG +/- an input clock period, Symbol times also aligned with the clock
Portability	100% hardware only solution, no dependency on external CPU or external driver circuitry features Vendor independent, written in plain VHDL Low footprint and low frequency requirements
Modularity and scalability	Simple time format can be also sourced by third-party clock core 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 with 1 IRIG output and 1 PPS output
  - Top level VHDL file
  - Timing Constraint SDC files
  - Vivado/Quartus Project file

Related Products:

- PTP Ordinary Clock
- PTP Grandmaster Clock
- PTP Hybrid Clock
- PPS Slave
- TOD Master/Slave
- Adjustable Clock
- Signal Timestamper
- Signal Generator

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