ClockSignalGenerator

A low-footprint signal generator which uses NetTimeLogic's clock IP core as source for signal generation. Allows single, multi (configurable) and continuous pulse generation with configurable polarity, start time, interval and duty cycle.

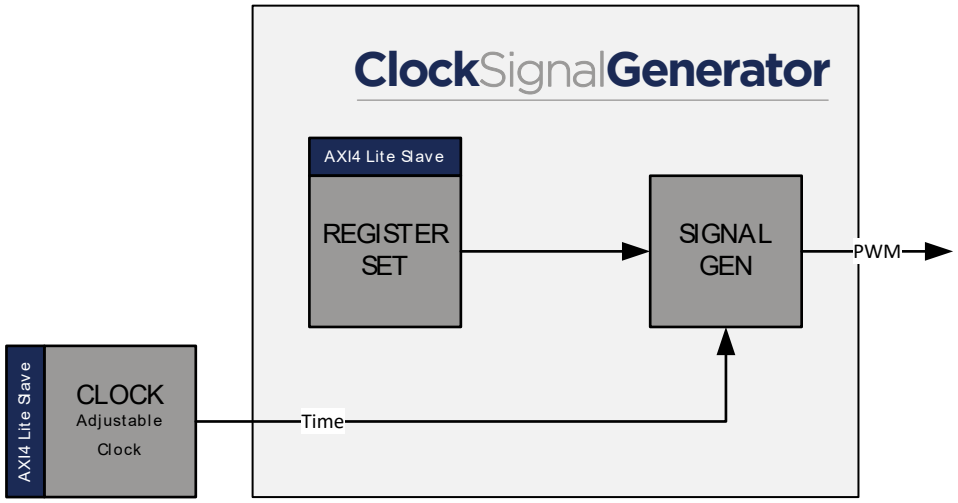
Key Features:

- Clock aligned signal generation
- Single, multi and continuous signal generation
- Configurable polarity, start time, interval and duty cycle
- Output delay compensation
- AXI4 lite slave interface
- Optional DTC for 1ns accuracy

Typical Applications:

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

IP Core Architecture:



Specification:

Generating	Aligned with NetTimeLogic's Clock Edge accuracy is one clock cycle of the adjustable clock IP core Output delay compensation takes also external delays into account 32bit second and 32bit nanosecond time format for start time, interval and duty cycle 32bit counter for number of pulses to generate Auto disabling on time jumps
Performance	Output signal max frequency depends on clock frequency and edge jitter tolerance of user application Absolut max frequency is clock frequency divide by 10 Accuracy of edges +/- half an input clock period without oversampling clock or one clock cycle of the oversampling clock or 1 ns with DTC
Portability	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 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
- Linux Driver

Related Products:

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

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