SyncEthernetNode

A low-footprint, highly configurable, 100% hardware only Synchronous Ethernet Node (SyncE) solution according to ITU-T G.8264, specifically designed for Telecom Networks. Allows standalone synchronization with ESMC frame handling and State decision.

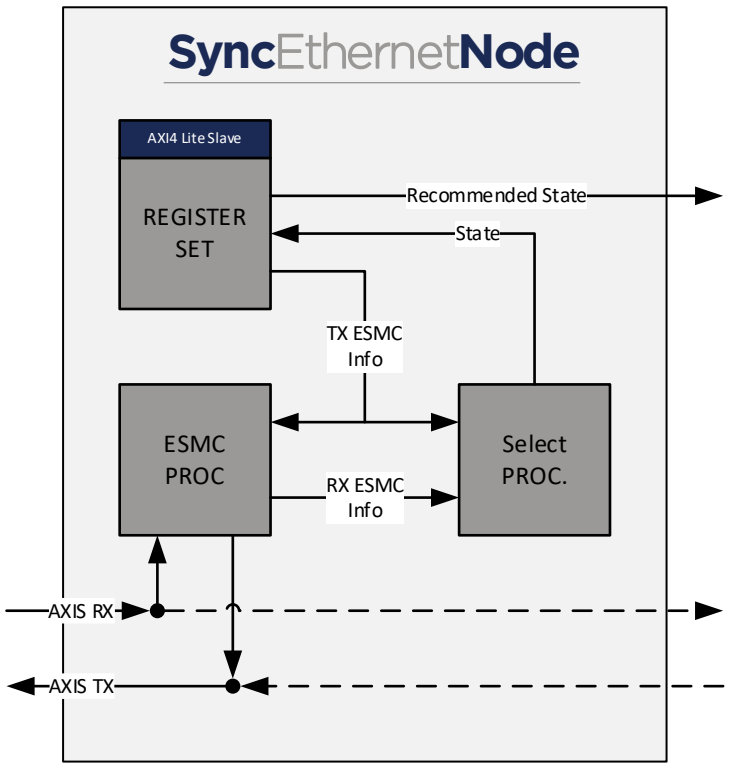
Key Features:

- SyncE ESMC and Enhanced ESMC Frame Handler according to ITU-T G.8264
- State Selection on ESMC and Enhanced ESMC Messages
- 100% hardware only solution
- Vendor independent
- Auto Selection or Override
- SyncE Option 1 & 2 Support

Typical Applications:

- Telecom Networks
- High Accuracy Synchronization Networks
- Etc.

IP Core Architecture:



Specification:

Synchronous Ethernet	ESMC Frame Sender and Receiver according to ITU-TG.8264
	Optional Enhanced ESMC Frame Sender and Receiver
	State Selection based on ESMC or ESMC and Enhanced ESMC
	SSM codes and QL mapping according to ITU-T G.781
	Override Mode to set State
	Frame Supervision and Timeout indication
	Mapping of received Frame Info to Status Registers
	Pass Through Mode to intercept an Ethernet path e.g. between PTP Ordinary Clock and a MAC
Portability	100% hardware only solution, no dependency on external CPU
	Vendor independent, written in plain VHDL
	Low footprint and low frequency requirements
Modularity	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 Ordinary Clock
- PTP Grandmaster Clock
- PTP Hybrid Clock
- PPS Master
- TOD Master/Slave
- Adjustable Clock
- Signal Timestamper
- Signal Generator

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