syn1588® NIC Box

The All-In-One PTP Node

Features

- Master and Slave capable PTP Node compliant to IEEE 1588-2008

- IEEE 1588 hardware timestamping with 4 ns accuracy

- Support for the following PTP profiles:
  - Default
  - Broadcasting: AES-67 and SMPTE ST2059-2
  - Power: IEEE C37.238-2011 and IEEE C37.238-2014
  - Telecom: T.REC-G.8265.1 and T.TEC-G.8275.1
  - IEEE 802.1AS

- 4 programmable I/O signals accessible via SMA jacks:
  - 1 PPS (input/output)
  - Arbitrary frequency (output)
  - IRIG-B000 (input/output)

- Connectivity to an external GPS receiver

- Intuitive web interface for remote configuration

- Extensive measurement capabilities for PTP networks:
  - Performance monitoring via PPS measurement
  - Network load analyzer

Options

- 2 PTP interfaces with 8 programmable I/O pins
- Video sync signal generation for broadcasting applications
- Oscillator options:
  - TCXO (default)
  - OCXO
- 1000BASE-X (fiber) mode using SFP type interface

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PTP made easy

The syn1588® NIC Box from Oregano Systems simplifies using PTP. Without any hardware or software installation one can run a full featured IEEE1588 node out of the box.

The syn1588® NIC Box

We simply put everything together required for a reliable accurate PTP node. A Linux based PC in a 19" 1HE case holding the famous syn1588® PCIe NIC. All required software is pre-installed and pre-configured. One just needs to connect the syn1588® NIC Box to mains and to your network. That's all.

The front panel display of the syn1588® NIC Box informs you about the basic parameters and status of your PTP node. Thus, one would not even need to connect a monitor or remotely login to the unit.

Accuracy at your finger tips

The syn1588® NIC Box is a highly versatile, high performance PTP node capable of delivering a variety of precise timing signals. Aside from a standard 1 pulse per second, two arbitrary frequencies as well as an IRIG-B signal can be generated. It is designed to receive or transmit timing information over an Ethernet network using the Precision Time Protocol (PTP) defined in IEEE 1588-2008.

Remote Management

The syn1588® NIC Box can be configured and monitored via an intuitive web interface. All major settings such as network parameters, selecting PTP profiles, and specifying PTP parameters are easily accessible via a secure http connection. Additionally, the syn1588® NIC Box offers extensive monitoring capabilities as well as graphical diagrams showing the performance (offset from Master, path delay, etc.) in PTP Slave mode.
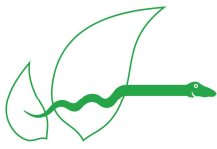
Applications

The syn1588® NIC Box can be used as test and evaluation platform to verify the capabilities and performance of PTP in general or more specific of Oregano Systems' syn1588® solutions. Since no installation or configuration is required the syn1588® NIC Box is ideally suited for customer that would like to jump start into their application without dealing of all the PTP details.

It's 19" form factor eases the integration of PTP into your existing server infrastructure. Just mount the unit into your server rack and PTP is available.

Since the well-established high-performance syn1588® PCIe NIC is included in the syn1588® NIC Box all sophisticated features are available as well: one can generate arbitrary frequencies in the range from mHz to 150 MHz, timestamp external hardware events, create IRIG-B serial streams, connect to an external GPS receiver as an absolute time reference for IEEE1588 master applications etc.

Video Sync Signal Generation

Optionally, syn1588® NIC Box can be extended with an analog module to generate black burst and tri-level video sync signals according to the respective SMPTE standards. Aside from setting the frequency correctly with respect to the requested video resolution and frame rate, their phase offset is properly aligned to PTP time, as specified in the SMPTE ST2059-1 standard.

Technical Specifications	
Standards	IEEE 802.3-2008
	IEEE 802.3az Energy-Efficient Ethernet
	IEEE 802.1Q Virtual Bridged Local Area Networks
	IEEE1588-2008 Precision Time Protocol
	IEEE Std C37.238-2011, IEEE Std C37.238-2014
	IEEE 802.1AS
	ITU-T G.8265.1/Y.1365.1 (10/2010), ITU-T G.8275.1
	SMPTE ST2059-2
Storage temprature	-40°C to 85°C
Operating temperature	0°C to 50°C
Humidity	5% to 80% non-condensing
Dimensions	19" Rackmount 1U, 44.45(H) x 482.6(W) x 254(D)

Oregano Systems

The Flavour of Excellence

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