syn1588 ®

Features

- Dual Ethernet network interface card
  - SFP type network interfaces
  - 100BASE-TX, 1000BASE-X, 1000BASE-T
- PCI Express card (half height)
  - PCI Express V2.0 mode with 5 Gbit/s lane speed
- Optimized for timing applications but not for network throughput
- IEEE1588-2002, IEEE1588-2008 and , IEEE1588-2019 compliant
- Master and Slave capable PTP Node (with syn1588® PTP Stack)
- IEEE1588 hardware timestamping
- Patented on-the-fly timestamping (1-step mode)
- Clock accuracy up to ±4 ns
- syn1588® PTP Stack binary run-time license included (Linux & Windows)
- Evaluation platform for special timing structures
  - PRP
  - HSR
- Programmable I/O functions available on SMA jack
  - 3 more connectors internally available
- Drivers for Linux only
- User configuration, remotely upgradeable

Options

- Oscillator option: OCXO

syn1588® Dual NIC

The syn1588® Dual NIC is a standard 100/1000 Mbit PCI Express Ethernet network interface card offering two SFP type network interfaces. Both network interfaces are enhanced to provide highly accurate clock synchronization via the IEEE1588 standard. The syn1588® Dual NIC provides all real-time functions required for an IEEE1588 node to operate both in master and slave mode.

The syn1588® Dual NIC comes with the network driver and a run-time license of the syn1588® PTP Stack. The latter performs all IEEE1588 tasks like master/slave selection via the best master clock algorithm. Currently, both driver and stack are available for Linux OS only.

Furthermore, the syn1588® Dual NIC may operate either in 2-step or 1-step PTP mode using Oregano Systems' patented on-the-fly time stamping technique for the latter mode.

The syn1588® Dual NIC is capable of handling up to four high accuracy digital IO signals directly linked to the high accuracy clock within the FPGA device. The direction and functions of these I/O signals may be selected by the user via a remote configuration interface. There is one SMA connector available on the PCI bracket; internally, there are three more connectors available.

Beside acting as a dual network interface card with full IEEE1588 support the syn1588® Dual NIC is intended as evaluation platform for special PTP timing architectures like HSR or PRP. For these special timing architectures Oregano Systems will offer customized PTP solutions in both hardware and software.

.

syn1588® Dual NIC

Brief Data Sheet

Version 1.3 – December 2020

Technical Specifications	
Standards	IEEE802.3-2008
	IEEE802.3az Energy-Efficient Ethernet
	IEEE802.1Q Virtual Bridged Local Area Networks
	IEEE1588-2002 Precision Time Protocol
	IEEE1588-2008 Precision Time Protocol
	IEEE1588-2019 Precision Time Protocol
	PCI Express interface & signaling V1.1a and V 2.0
Installable PCI slot	PCI Express 1/2/4/8/16 lane slot
Supported functions	Programmable hardware timestamper
	IEEE1588 compatible high precision hardware clock
	Up to 4 programmable SMA I/Os
Storage temperature	-40°C to 85°C
Operating temperature	0°C to 50°C
Humidity	5% to 80% non-condensing
Dimension	135 x 66,4 mm
	Half height PCI card with bracket (three bracket options available)
Driver support	Linux kernel version 2.6.32 to 5.0

Oregano Systems
A Meinberg Company

Franzosengraben 8
A-1030 Vienna
Austria
http://oregano.at
contact@oregano.at