

netANALYZER

Delay & Jitter @ Real-Time Ethernet?

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Description

With the application of Ethernet technologies to the factory floor several features have been broadly adopted requiring a new generation of test hardware to monitor and diagnose industrial Ethernet networks. Hardware must exist that can reside within a 2 port bus segment requiring an integrated hub or switch depending on the Ethernet protocol used. Secondly the analyzer must be able to accurately record the time events on the network to a resolution that is far beyond the needs of the office network environment. These diagnostic features allow the user to properly monitor critical industrial functions including propagation time and jitter of the Real-Time-Ethernet protocols.

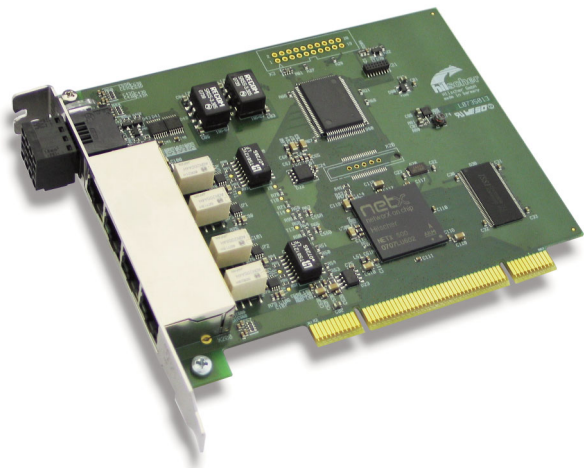
To properly measure delay times and jitter up to four Ethernet Ports are required on a full duplex network, rarely available on a standard PC but an integral part of the netANALYZER. Traditional Ethernet tools based on standard PC cards provide Time measurement within a microsecond, but for real time Ethernet protocols this must be better by a factor of 1,000.

The netANALYZER, an intelligent PC card, possesses internal TAPs and captures two Ethernet connections bidirectional. Each Ethernet frame gets a time stamp with a resolution of 10ns. With this, delay times and jitter can be measured. For further analysis this data can be transferred to Wireshark with the open WinPCAP format. Plugins for Wireshark are available for the EtherCAT, EtherNet/IP, Powerlink, PROFINET and SERCOS III protocols.

In fact, everyone implementing a Real-Time Ethernet protocol into a device should have a network analyzer.

Highlights

- PCI card with integrated TAPs
- Four channels to capture two Ethernet connections with both data directions
- Time stamp for Ethernet frames with 10ns resolution
- IO event signals for analyzer software
- Open WinPcap file format for data analysis with Wireshark



netANALYZER

Technical Details

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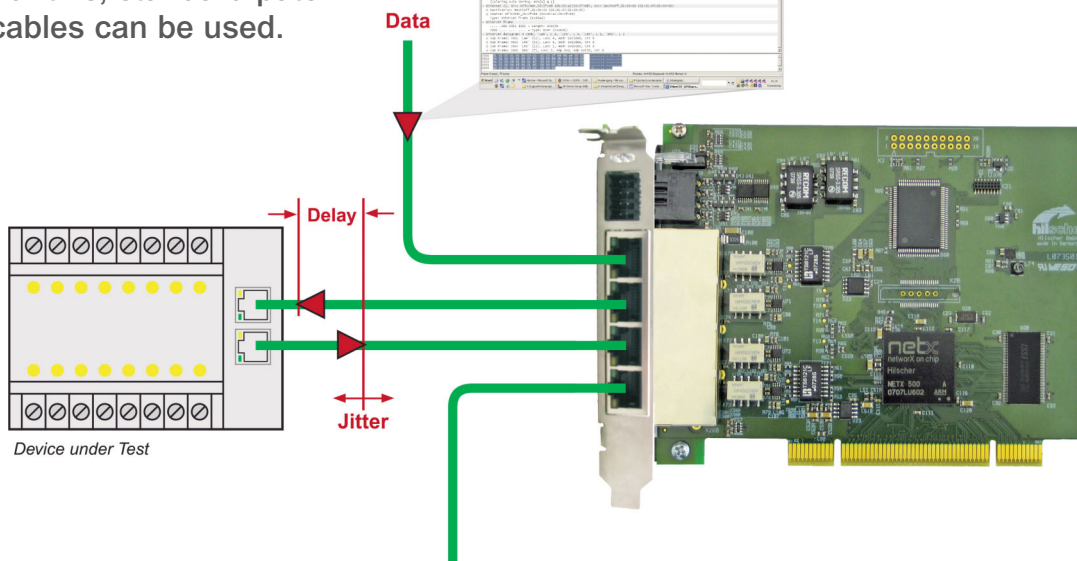
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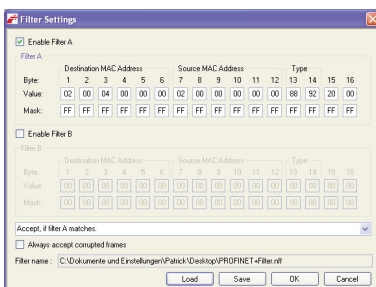
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Application

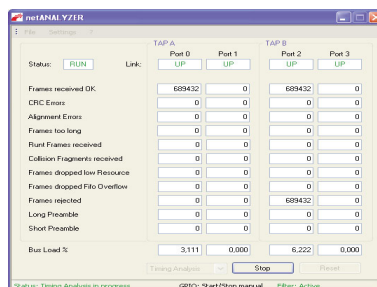
The Ethernet cables of the device under test are connected to the TAPs of the netANALYZER. For this, standard patch cables can be used.



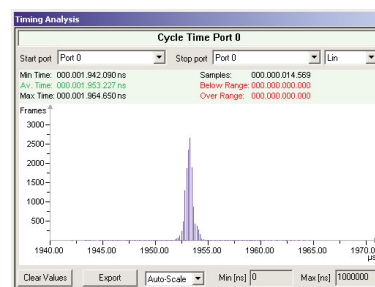
The start and stop of capturing traffic can be controlled by the netANALYZER program. The data is then stored on the hard drive where Wireshark can access this data for analysis. Free plugins are available on the internet for; EtherCAT, Ethernet/IP, Powerlink, PROFINET and SERCOS III.



Settings of the filter parameters



Status display and error counter



Graphic display of the bus cycle time

Technical Data

Parameter	Value
Channels	4, Ethernet 100 BASE-TX, RJ45
TAP	2, integrated
Displays	SYS / System Status STA0 / Capturing active / inactive STA1 / Event signal detected Link and Activity per channel

Parameter	Value
Timestamp Resolution	10 ns
PC Interface	PCI V2.3 / 33 MHz
Power Supply	3.3 V / 800 mA
Operating Temperature	0° ... 55° C
Size (L x W x H)	137 x 107 x 16 mm

Product Overview

Article Designation	Article Number	Article
NXANL 50-RE	6310.100	netANALYZER for Real-Time-Ethernet, PCI Format