

netANALYZER

Delay & Jitter @ Real-Time Ethernet

Highlights

- Nonreactive analysis through integrated TAPs
- Four channels to capture two Ethernet connections with both data directions
- Time stamp for Ethernet frames with 10 ns resolution
- IO event signals for analyse timing of protocol stack
- Open WinPcap file format for data analysis with Wireshark
- API for custom measurement applications
- Form factors: PCI card, device with ExpressCard uplink or device with Gigabit-Ethernet uplink
- Timing analysis
- Netload analysis



Automation technologies require linear network topologies, which have been established in the fieldbus technology. The application of a Real-Time Ethernet protocol leads to the need of Ethernet devices with two ports, internal switches or hubs and critical demands on delay and jitter.

Today's analysis programs, such as the popular 'Wireshark', are available free of charge from the Internet and are using the PCs built in Ethernet ports as analyzer hardware. To connect to the Ethernet cables, additional TAPs (test access points) are required. Delay measurements in full-duplex mode require four recording channels, which usually exceeds the number of available Ethernet ports on a PC; its time stamp accuracy in the microsecond range should be more precise by the factor 1000 to obtain a sufficient resolution.

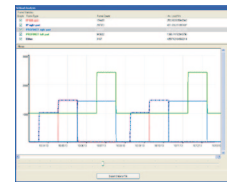
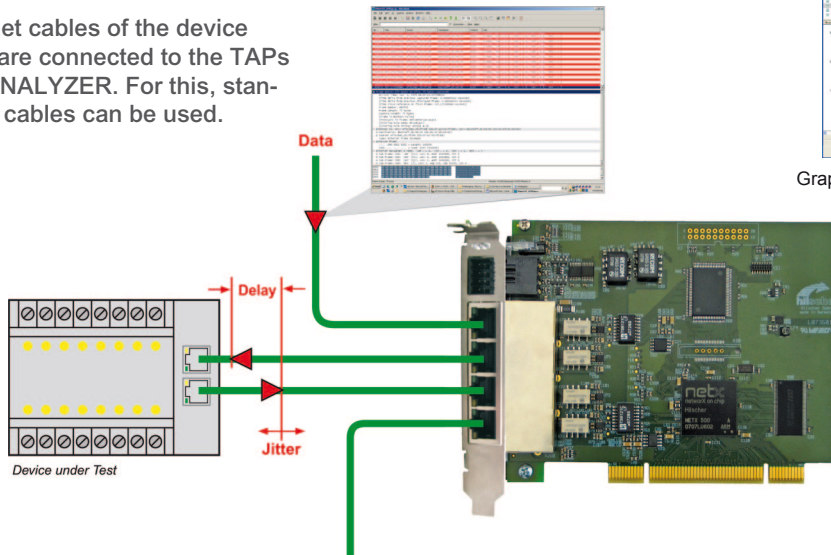
The netANALYZER is a network analyzer which has two built-in TAPs, allowing the bidirectional capture of two Ethernet links. During the capture process each Ethernet frame is time-stamped with 10 ns resolution, from which one can determine delay and jitter. For further analysis data is stored in the open WinPcap format, allowing Wireshark to open the file and using its so-called protocol dissectors available for EtherCAT, EtherNet/IP, Powerlink, PROFINET and SERCOS III.

The netANALYZER offers a Windows API, which allows using the hardware in customer specific measurement applications. The integrated netload analysis enables the graphical acquisition of netload scenarios, for example defined in the PROFINET standard.

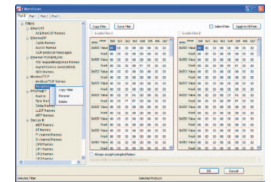
Technical Data/ Product Overview

Application

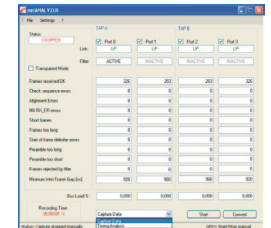
The Ethernet cables of the device under test are connected to the TAPs of the netANALYZER. For this, standard patch cables can be used.



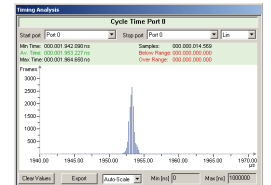
Graphic display of the netload



Settings of the filter parameters



Status display and error counters



Graphic display of the bus cycle time

The start and stop of traffic capturing and the measurement of jitter, delay and netload can be controlled by the netANALYZER program. The data is then stored on the hard drive where Wireshark can access this data for analysis. Analysis plugins are available free of charge on the Internet.

	Parameter	NANL-C500-RE	NANL-B500E-RE	NANL-B500G-RE
Technical Data	Timestamp Resolution	10 ns	10 ns	10 ns
	PC Interface	PCI V2.3 / 33 MHz	ExpressCard 34, PCI Express Base Specification Revision 2.0 and PCI Express to PCI/PCI-X Bridge Specification, Revision 1.0	Gigabit-Ethernet
	Power Supply	3.3 V / 800 mA	nominal 24V DC / 180mA / 4,3W field 18V ... 30V DC	nominal 24V / 620mA / 14,9W field 18V ... 30V
	Operating Temperature	0° ... 55° C	0° ... 55° C	0° ... 50° C
	Size (L x W x H)	137 x 107 x 16 mm	115 x 62 x 133 mm	115 x 62 x 163 mm

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

	Article Description	Article Number	Article
Overview	NANL-C500-RE	7310.100	netANALYZER Card-PCI RTE
	NANL-B500E-RE	7311.100	netANALYZER Box-PCle RTE
	NANL-B500G-RE	7313.100	netANALYZER Box-Gigabit RTE

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