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DA-380

DominoGigabit® Internetwork Analyzer



For monitoring, troubleshooting and simulation of Gigabit Ethernet backbones

- *Full line rate, full-duplex transmit, capture, filters & statistics*
- *Award-winning expert analysis system*
- *Identification of more than 1000 protocols with over 400 decodes including 802.1p and 802.1q*
- *More than 100 statistics and graphs*
- *Auto-decodes auto-negotiation link configuration status*
- *User configurable filters, triggers & counters*
- *Hot swap GBIC interface modules*

Field-Service Solution for Internetworks

Field-service organizations require an analyzer that can handle the multiple protocols and multiple topologies of today's complex internetworks and backbones. They also need one that's easy to carry and easy to use. The DominoGigabit® analyzer provides a complete solution in one box. The analyzer can monitor link activity and decode all major protocols as well as generate network traffic on Gigabit Ethernet, making it an excellent tool for troubleshooting Gigabit backbones.

The DominoGigabit analyzer is more than a Gigabit Ethernet instrument, however. Because it can link to any other Domino® analyzer, it also performs as an internetwork analyzer, allowing you to track a problem across multiple segments of varying types.

Weighing approximately 3 pounds, DominoGigabit connects to and is controlled by your notebook PC. Up to eight Domino analyzers can be linked together to perform multisegment analysis. By generating and receiving traffic simultaneously, Domino analyzers are ideal tools for benchmarking and tracking problems across routers, bridges, gateways and other equipment prior to installation or after an upgrade.

High-Performance Architecture

Dedicated buses for each receive and transmit channel, plus custom hardware Field Programmable Gate Arrays (FPGA's) designated to generate, capture and filter Gigabit Ethernet data assure full line-rate operation. Additionally, multiple RISC processors are utilized in parallel to keep network statistics and decode traffic.

Problems Caught with Full Line Rate and Full-Duplex Operation

Full line rate, full-duplex capture, receive, and transmit functions ensure every piece of data is available for problem analysis and resolution. Full-duplex operation with bi-directional pass-through and simultaneous transmit and receive functions allow both sides of the conversation to be monitored.

Capture

- 128 Mbytes capture buffer
- Pre-capture frame slicing enables you to capture more frames for analysis by "slicing" out the data-payload portion of the frame and keeping only the protocol portions
- 32 ns timestamp

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Transmit

- Transmit up to 100 percent line rate
- Create user-defined frames for transmit or use frames from capture files
- Set the interframe gap at 20 ns intervals, starting at 40 ns
- Transmit continuously or a defined number of times

Customize Filters, Triggers and Counters on the Fly

DominoGigabit offers flexibility in how you work with filters, triggers and counters by enabling you to define criteria to suit your needs while you're performing the analysis.

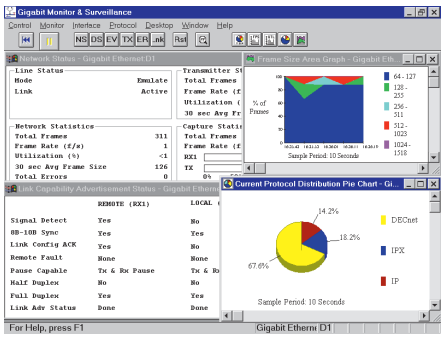
Filters/Triggers/Counters

- (8) 112 byte pattern-matching filters and triggers
- Full line rate performance
- Network protocol criteria includes MAC, IP and IPX (LLC, 802.3, SNAP)
- Easy filtering for runts, jabbers, CRC errors, etc.
- Flexible filter and trigger editing
- User-definable triggers allow you to capture data before and after the specified event

Intelligent Graphs Speed Up Problem Isolation

Full color, customizable, Windows®-based graphs make it easy to spot potential problems and begin analysis immediately. Graphs include:

- Network Utilization
- Top Station Talker
- Protocol Distribution
- Frame Rate
- Frame Size Distribution



Additionally, the DominoGigabit Save Statistics function works as a powerful reporting tool.

Hot Swap Between Singlemode and Multimode

DominoGigabit reduces the cost of performing singlemode (LX) and multimode (SX) Gigabit analysis both at the time of initial investment and when in use. By employing exchangeable optical transceivers, DominoGigabit can offer both modes of analysis in the same Domino analyzer chassis, which means avoiding the purchase of two separate analyzers to perform these functions.

Once deployed to the user, these small optical transceivers can be carried in the field and hot swapped as needed without any tools. Simply pull out one and plug in the other. This capability also assures your support of future UTP networks, as a low cost UTP transceiver is all that is required to ready your system.

Link Auto-Negotiation Status and Testing

Network professionals and field-service engineers often find more immediate value in knowing the results of the link negotiation between two devices rather than lower-level symbols. To this end, DominoGigabit displays the meaning (equivalent of decoding) of the link status symbols. This information is provided online and instantaneously so the engineer knows immediately if there is a problem in this area. And since DominoGigabit can advertise different link states and display the negotiated status, the engineer can test the device to determine if it is functioning properly.

DominoNAS Software: Fast, Comprehensive Troubleshooting

The DominoNAS Network Analysis Suite includes the software necessary to run all high performance Domino analyzers, including DominoGigabit. Its extensive capabilities allow you to perform complete network troubleshooting and analysis, from data capture to protocol decoding to expert analysis. All DominoNAS applications are launched from a single point, and can run simultaneously.

With its Microsoft Windows-based user interface and autoconfiguration function, DominoGigabit is as easy to use as it is powerful. Microsoft Windows compatibility also provides access to additional Windows applications and utilities, such as word processors, spreadsheets and print managers, making report generation a breeze.

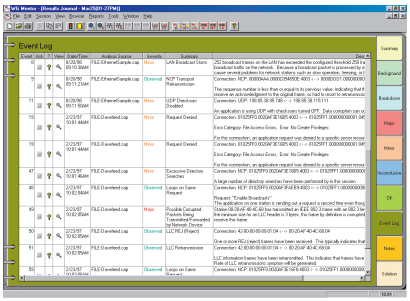
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Examine™ - Robust Decode Engine

Online or offline, DominoGigabit makes use of WWG's world-renown Examine™ decode engine. Included with DominoNAS, Examine identifies more than 1000 protocols and fully decodes over 400 decodes, including 802.1p and 802.1q. With a simple mouse click, Quick Filters creates filters that incorporate information from the currently examined frame as a model. Use comprehensive Advanced Filters for multiple customizing options, including full Boolean logic.

Interactive Expert Analysis Pinpoints Problems and Speeds Up Resolution

Resolve problems faster with WWG's award-winning DominoNAS Expert Analysis System. Using capture files from Domino-Gigabit, DominoNAS Expert accurately pinpoints, prioritizes and proposes solutions to network problems. While other expert systems merely count and report network problems (sometimes masking the real problem), DominoNAS Expert prioritizes events for each situation based



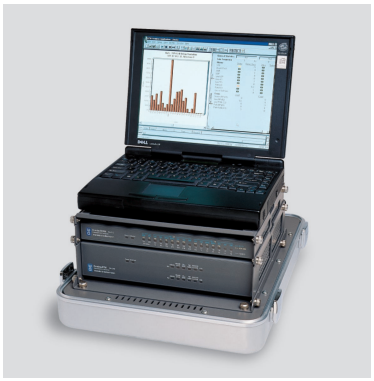
on input and past history - and then tells you how to fix them. And DominoNAS Expert scales to the user's expertise. Whether you're an occasional user, intermediate or expert, DominoNAS Expert is a trusted and skilled counselor.

Remote Gigabit Analysis: Anywhere, Anytime

When sending personnel into the field is prohibitive, WWG provides alternatives with DominoServer™. Acting in a client/server model, network professionals connect to the DominoServer and control remote Domino analyzers - realizing all the features and functions as if the analyzers were locally attached. Users can connect, start an application, disconnect and return at a later time to view or stop the session all without interrupting or stopping the analysis. And since the processing is being done on the Domino analyzers attached to DominoServer, minimal traffic is being added to the network or dial-up link when the user is connected.

Transportable Gigabit Analysis Kit on Alert

Domino Attaché is a rugged aluminum case used for safe and secure transportation of Domino analyzers. Domino units are mounted in a small, expandable rack system in the base shell while an optional laptop computer can be secured on top of the rack system with a heavy-duty Velcro® strap. The removable top allows full access for mounting, pre-wiring and plugging in Domino analyzers providing an analysis kit ready for immediate use. Domino Attaché fits in most airline overhead compartments and securely locks for overnight transportation.



Analyzer, laptop and software can be pre-configured to provide an analysis kit ready for immediate use.

Notebook Compatibility and Connection

With its small footprint and stackable design, DominoGigabit analyzers accommodate most popular Windows-compatible PCs. This compatibility allows you to choose and upgrade your PC according to your needs and desires, so you're not held captive to a proprietary platform or yesterday's PC standard.

Warranty Information

Domino analyzers come with a two-year manufacturer's warranty, which covers any hardware defects detected by the customer or Wavetek Wandel Goltermann. DominoNAS software includes a one-year software subscription with product purchase.

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DominoGigabit (DA-380)

Modes of Operation	
Interface Connectors:	GBIC (LX, SX now CX when available)
Optical Specifications:	850 nm (SX), 1300 nm (LX)
Network Status	
Line Status:	Signal Detect, 8B10B Sync, Remote Fault, Link Config Acknowledgment, Pause Capabilities, Duplex, Link Config Done
Network Statistics:	total frame, frame rate (f/s), utilization (%), 30-sec. average frame size, total errors
Transmitter Statistics:	total frames, frame rate (f/s), utilization (%), 30-sec. average frame size, total errors
Capture Statistics:	total frames, frame rate (f/s), % filled
Network Statistics (RX1, RX2 and Total)	
Frame Summary:	valid frames, (broadcast, multicast, unicast), pause control frames
Statistical Summary:	current and peak frame rate, current, peak, and 30-sec. avg. utilization (%), 30-sec. average frame size
Capture Statistics (RX1, RX2 and Total)	frame count, current, peak, frame rate (f/s)
Error Summary Screen	FCS, runts, short, oversizes, jabbers, PCS
Link Autonegotiation Configuration Status	
Definable parameters	
Duplex	full/half
User can setup Autonegotiation (when enabled)	
Pause Capabilities	Sync, None, Async
Filter/Trigger	hardware-based, full-duplex, full line rate capable; eight 128-byte pattern-matchers from beginning of frame
Capture	
Buffer Size:	128 Mbytes (64 Mbytes per channel)
Speed:	full line rate capable
Maximum Captured Frame Size:	3968 bytes
Timestamp:	31.25 nsec, ±31.25 nsec

Transmit	
Buffer Size:	256 kbytes
Speed:	line rate
Minimum Interframe Gap:	floodmode: 40 ns normal Tx: 96 ns
Frame Definition:	4 byte to 8 kbytes size, 1536 bytes editable
Frame Transmission:	allows programmable repetition of sequences of user-defined frames
Maximum Number of Frames in Tx Sequence:	depends on selected frame sizes, whatever fits in 256 kbytes
General Specifications	
Laser Safety:	singlemode and multimode: FDA 21 CFR 1040.10/11, IEC-825, EN60825
Safety:	UL 3111-1, CAN/CSA C.22.2 No. 1010.1, IEC-1010-1, EN61010-1
Power Supply:	100-240 VAC, 50/60 Hz
Power Consumption:	150 VA
Weight:	2.5 kg (5.4 lbs.)
Size (LxWxH):	290×286×71 mm 11.4×11.3×2.8 inches
Ambient Temperature Range:	
Use	+5 to +40°C
Storage and Transport	-20 to +60°C

Minimum PC Requirements
For minimum PC requirements, visit our website: http://www.wg.com/products/domino/pc_specs.html

Ordering Information

BN 9316/07	DominoGigabit Chassis*

Includes integrated power supply, user documentation, notebook/parallel port cable.

BN 9316/90.19	DominoGigabit Singlemode Interface
BN 9316/90.20	DominoGigabit Multimode Interface
BN 9316/93.30	DominoNAS Network Analysis Suite (required)

* *Must order the chassis and at least one interface.*

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