DA-3400/DA-3600A Ethernet Analysis
Real-Time Monitoring and Testing

Key Features

- 10/100/1000 Mb/s Ethernet analysis in one instrument
- Seven layer problem identification decoding and event notification
- VoIP call quality and signaling analysis
- Routing protocol analysis
- Real-time application response time measurements
- Support for stacked VLAN and MPLS labels
- On-demand and automated report generation
- Real-time QoS monitoring

FROST & SULLIVAN

2007

Global Communications Test & Measurement Company of the Year Award

The explosive growth of Internet-based applications and distributed business network services has made network performance and reliability vital to the success of today's businesses. For years, Ethernet has been the dominant architecture for local area networks (LANs) and departmental workgroup networks. Since the deployment of Gigabit Ethernet, though, Ethernet has also become a key technology for service providers delivering extended LAN services. This new application for Ethernet has afforded service providers with the ability to offer high-revenue and low-cost services for customers demanding increasing amounts of bandwidth. Preventing downtime on these networks requires new tools and processes that allow network engineers to quickly identify the root causes of problems affecting network performance.

The JDSU DA-3400 and DA-3600A Data Network Analyzers, along with JDSU Ethernet Analysis Software, allow for fast identification and troubleshooting of difficult higher-layer data problems and enable network operations personnel to solve complex data network and service problems more easily during turn-up, troubleshooting, and baseline testing of network services. JDSU Ethernet Analysis Software provides extensive troubleshooting capabilities and expert tools for maintaining uptime on Ethernet networks, isolating VoIP call quality and set-up issues, and identifying customer traffic anomalies.

In addition to Ethernet Analysis Software, JDSU also offers high-speed WAN and ATM analysis software for both the DA-3400 and DA-3600A and Packet over SONET (POS) software for the DA-3600A.

# Features

10/100/1000 Ethernet in One Instrument

With 10/100/1000 Base-T and SX/LX Gigabit support in one interface module, the DA-3400 and DA-3600A each provide an all-in-one test tool for Ethernet troubleshooting. Network connections may be through Ethernet switch SPAN ports, network TAPs, or in-line monitoring.

VoIP Analysis Option

Accurate at full line rate, the VoIP analysis option for the DA-3400 and DA-3600A provides detailed quality statistics and signaling message exchanges. The patented problem segmentation feature reduces the time it takes to locate the source of VoIP problems.

Combined VoIP and Data Analysis

The Ethernet Analysis Software performs VoIP and data analysis simultaneously. Technicians can quickly identify issues of resource contention, conflicting priority settings, and a wide variety of other problems that can result in poor network performance and dissatisfied users.

3
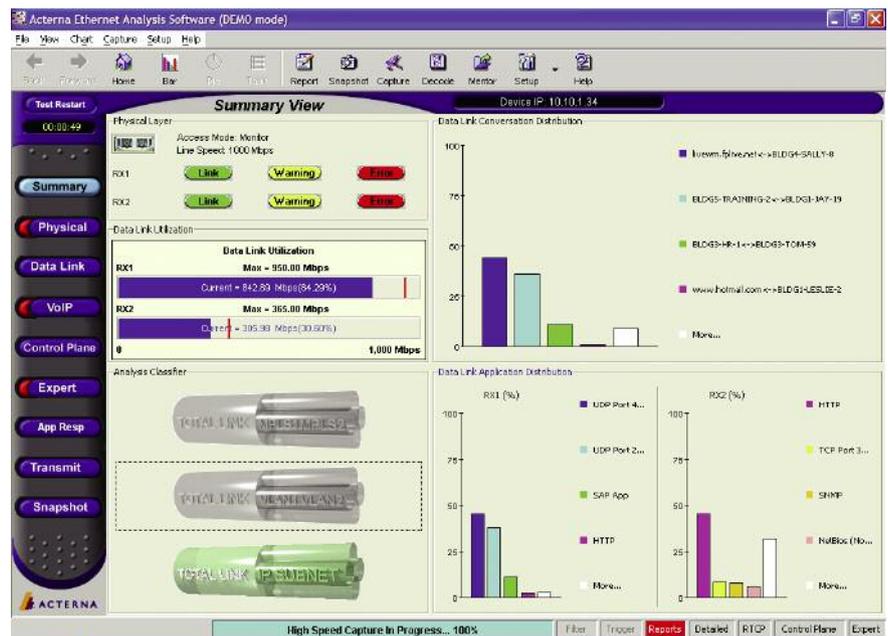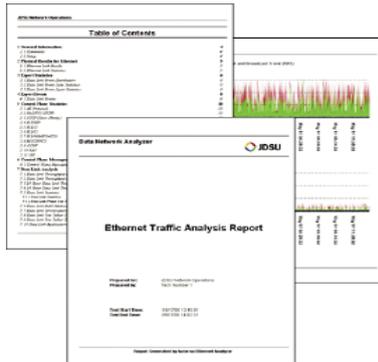
Event Identification and Notification

Fully integrated expert analysis software identifies and notifies technicians of events through all seven protocol layers. Automated e-mail notification and SNMP trap generation are independently configurable for each network event. Additionally, expert events can be utilized to automatically generate capture files for later analysis.

Reporting

Professional customizable reports can be created quickly and easily. The output format can be fully formatted for printing. In addition, the output format is compatible for use with database applications.

Control Plane Analysis

The Ethernet Analysis Software provides a view for control plane protocols that are related to routing, signaling, and authentication. Protocols statistics and display filters allow technicians to focus on specific message exchanges. Full decodes are available in real time for any control plane protocol.

VLAN, Subnet, and MPLS Analysis

The Ethernet Analysis Software automatically classifies traffic by its VLAN, subnet, or MPLS label. These classifications provide technicians with the ability to quickly identify bandwidth consumption, application distribution, and other relevant parameters within these traffic groupings.

Application Response Time Measurement

The application response time option provides details of DNS lookup time, client-to-server network latency, and server response time, along with details on MTU, retransmissions, and other transport parameters. This allows technicians to quickly identify specific problem areas that are the source of poor network and application response times.

History Mode

The test instrument's History mode allows technicians to view network traffic, applications, station statistics, and events for set periods of time. Defining the time period is accomplished using a graphical window that is integrated with a network utilization graph.

4

Remote or Local Operation

Using IP networks or dial-up connections, technicians can control the DA-3400 or DA-3600A remotely. For portable applications, a direct PC connection is also supported. Once initiated, network monitoring continues without the need to maintain the connection.

Real-Time Decodes

Protocol decodes, including summary, detailed, and hex displays, are displayed in real time. Packets streamed to the technician's PC can be saved onto a disk for subsequent analysis. Full filtering is supported, displaying only the frames of interest.

Tunneling Support

Support for tunneled traffic allows technicians to monitor the tunnels or the traffic within the tunnels.

5

Applications

VoIP Quality Analysis

Monitoring and troubleshooting quality problems on VoIP networks presents a unique set of issues. The VoIP Analysis option for the Ethernet Analysis Software provides technicians with displays of overall call load, multiple call statistics, and single call details. This allows technicians to evaluate the overall VoIP quality, identify trends, and troubleshoot single call related issues. Expert events detail problems and reduce the time it takes to resolve issues.

VoIP monitoring is performed using custom hardware to ensure absolutely accurate statistics, including jitter, packet loss, and MOS, on fully utilized Ethernet circuits with up to Gigabit speeds.

VoIP Signaling Analysis

Troubleshooting VoIP signaling can be time consuming. The VoIP Analysis option provides a display of signaling message exchanges for individual calls. This display includes information on timing and result codes, allowing technicians to identify problems quickly.

6

Quality of Service Monitoring

VLAN priorities and IP DiffServ code points are used to set the quality of service (QoS) levels for different types of traffic. The Ethernet Analysis Software displays the QoS settings for all data and VoIP connections on the network, allowing technicians to quickly identify and resolve configuration issues related to the QoS parameter settings.

Control Plane Analysis

Routing, signaling, and authentication protocols are used to define routing paths and validate users. Problems with packet exchanges can result in poor network performance, connection failures, and other issues.

The Control Plane Analysis feature supports real-time monitoring of RIP, BGP, OSPF, RSVP, EIGRP, LDP/TE, SigTran, IGMP, RADIUS, H.323, SIP, MEGACO/H.248, CiscoSCCP, and MGCP/NCS.

Application Response Analysis

Slow network response time is a common user complaint. Network latency, DNS lookup time, server request processing time, MTU size, and other factors directly impact the user experience and their perception of network performance. The Application Response Time option quickly identifies problems with the application design, client/server configuration, router configuration, or network packet transport. This allows technicians to optimize applications and quickly determine if problems are within the network, the client/server equipment, or the application.

7
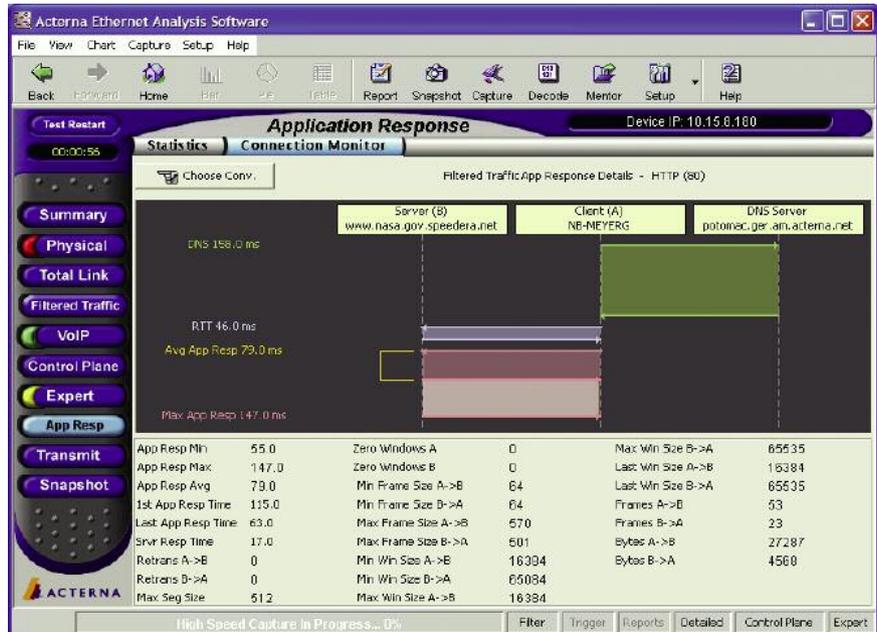
Security Analysis

Computers that become compromised by worms or virus can inflict damage on the network. The Ethernet Analysis Software can monitor for hosts generating traffic profiles that indicate a compromised host. JDSU makes available, via the Internet, a variety of different filter files that are designed to identify traffic patterns generated by specific worms and viruses.

Network Baselining

Baselining is the process of monitoring long-term trends, applications, and user patterns for the purpose of profiling the network. This information can then be used as a reference to ensure that new applications can be supported, identify the impact of new applications, isolate problems, and generate general performance overviews. The Ethernet Analysis Software provides long-term monitoring and reporting capabilities that are specifically designed to provide technicians with this valuable information.

Filter, Capture, and Decode

With its one Gigabit capture buffer, the DA-3400 and DA-3600A can capture and decode millions of frames. To reduce the amount of traffic that must be analyzed, the Ethernet analysis hardware filters are designed to be the most powerful in the industry. Multiple filters can be defined based on parameters such as VLANs, IP addresses, or subnets. More specific parameters, such as DiffServ code points or IP options, are also available. Pattern match filters identify packets containing specific data strings. Technicians can be assured that the captured traffic contains only those packets that match the filter settings.
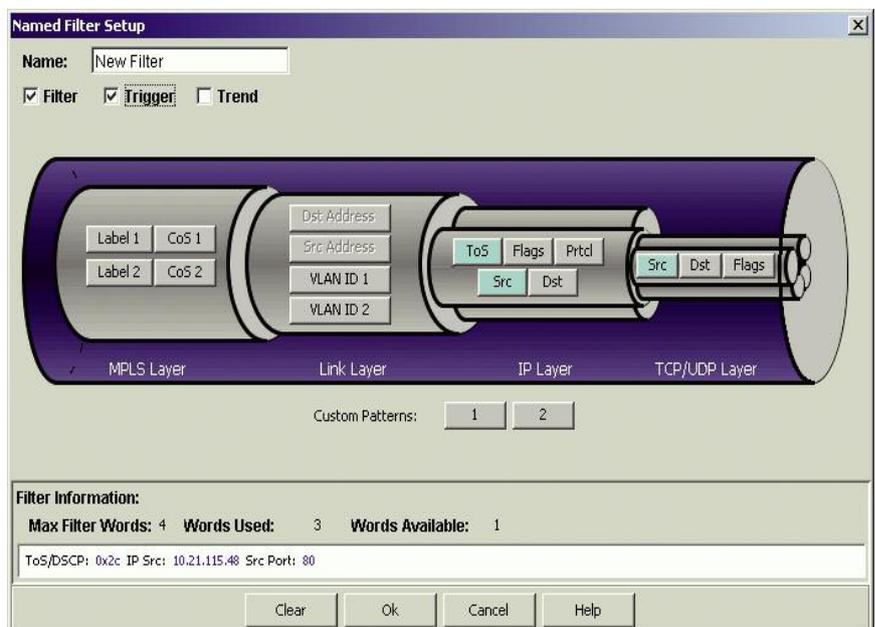
Technical Specifications

DA-3400 and DA-3600A Mainframes

Physical Characteristics

Overall dimensions	(w x l x d) 10.5 x 12.6 x 2.6 in
	(26.7 x 32 x 6.6 cm)
Weight	7 lb (3.2 kg)
Rack mount height	2U

Environment

Ambient temperature range	+5ºC to +40ºC
Storage and transport	-10ºC to +60ºC

Electrical

Power supply	100 - 240 VAC, 50/60 Hz
DA-3400 power consumption	70 W
DA-3600A power consumption	90 W

Safety

	UL 3111-1, CAN/CSA C22.2 No. 1010.1,
	IEC-61010-1, EN61010-1

Configuration/control/power connectors

RJ-45 10/100 Ethernet console port
Keypad with LCD for communication setup
LED indicators for physical, link, error
Dual cardbus slot
RS-232 serial port
12 VDC power supply input

Minimum system requirements

Windows 2000, Windows XP Professional
800 MHz processor
128 MB RAM — 256 MB recommended
300 MB disk space

Order information

Description	Part number
Mainframe	
DA-3400 Data Network Analyzer	DA3400
DA-3600A Data Network Analyzer	DA3600A
Interface Modules	
Ethernet	
10/100 Base-T Ethernet (DA-3400 only)	DA3000M-10/100
Dual RJ connectors	
10/100/Gigabit Ethernet	DA3000M-1G
Dual RJ connectors	
Dual GBIC slots	
Optical SX GBIC	AC-GBIC-SX
Optical LX GBIC	AC-GBIC-LX
DS1/DS3 E1/E3 WAN/ATM/ISDN Interface	DA3000M-DS/E
OC-3 STM-1 ATM interface	
OC-3 STM-1 Singlemode (DA-3400 only)	DA3000M-155-SM
OC-3 STM-1 Multimode (DA-3400 only)	DA3000M-155-MM
OC-3/12 STM-1/4 POS/ATM interface	
OC-3/12 STM-1/4 Singlemode	DA3000M-622-SM
OC-3/12 STM-1/4 Multimode	DA3000M-622-MM
OC-48c STM-16 POS interface	
OC-48c STM-16 Singlemode (DA-3600A only)	DA3000M-2.4G

Software and Options

DA-3400 and DA-3600A software	
Ethernet Analysis Software	DA3000S-Ethernet
WAN Analysis Software	DA3000S-HSW
ATM Analysis Software	DA3000S-ATM
VoIP Analysis Software	DA3000T-VoIP
VoATM Analysis Software	DA3000T-VoATM
Application Response Time	DA3000T-APPRES
DA-3600A advanced software	
Advanced (POS/Ethernet) Analysis Software	DA3600S-Advanced
Streaming Application Software	DA3600S-Streaming
Options	
Cardbus Hard Disk Drive	AC-018398
Rack Mount Kit	RM-18006
Gigabit Ethernet Upgrade (DA-3400)	DA3000T-1G
622 ATM Upgrade (DA-3400)	DA3000T-622
PVA-1000 VoIP Analysis and Playback	PVA-1000S-VOIPN

Test & Measurement Regional Sales

NORTH AMERICA	LATIN AMERICA	ASIA PACIFIC	EMEA	www.jdsu.com/test
TEL: 1 866 228 3762	TEL: +55 11 5503 3800	TEL: +852 2892 0990	TEL: +49 7121 86 2222	
FAX: +1 301 353 9216	FAX: +55 11 5505 1598	FAX: +852 2892 0770	FAX: +49 7121 86 1222	