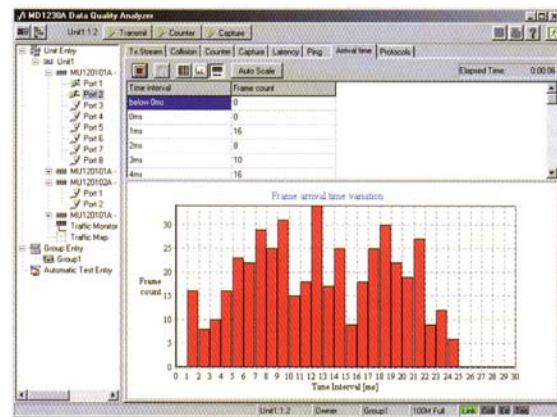




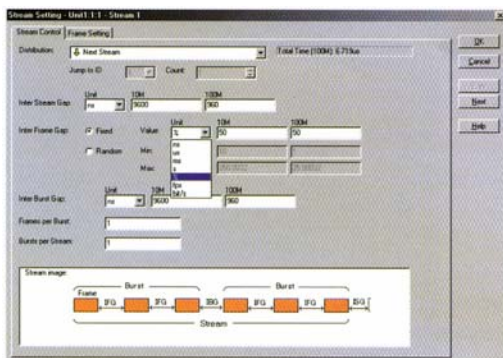
MD1230A Family Ethernet/PoS Test & Analysis Systems Voice/Video Over IP Capabilities



Frame Jitter Measurement On all Ethernet and PoS ports the MD1230A family testers provide testing for Frame Arrival Time Variation, a critical parameter that correlates directly to Video and Voice over IP (VoIP) network performance. VoIP frames must arrive within the correct time slot. A large variation in packet arrival may indicate jitter issues that could cause problems with video or voice jitter buffering.



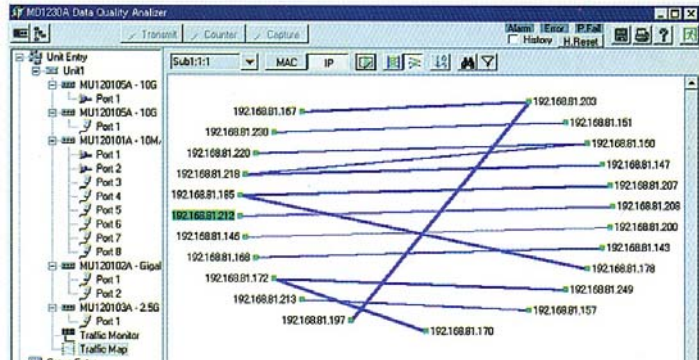
Network Latency Measurement In providing Voice over IP to remote telephones, considerations such as headquarters-to-branch latency and voice data bandwidth requirements must be taken into account. The MD1230A family can easily measure the end-to-end latency with microsecond precision and the transmission bandwidth between business centers and voice destinations for planning internal engineering support service criteria (such as VPN integrated services planning) and customer SLA development.



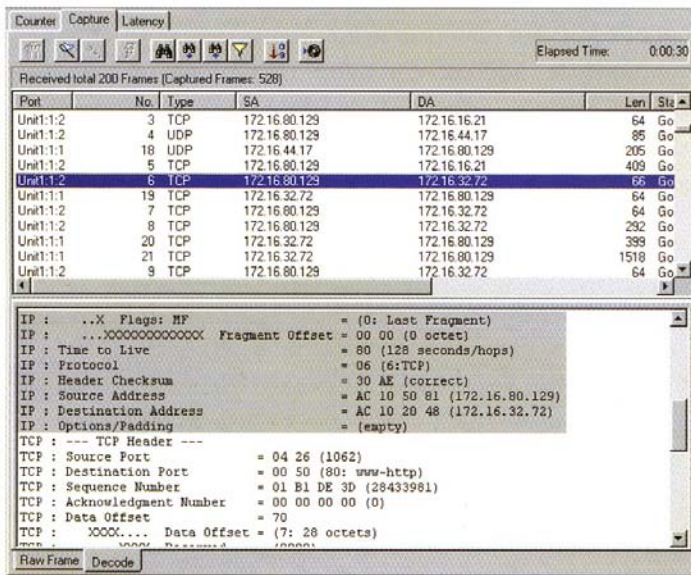
Transmit Stream Configuration VoIP traffic is based on the RTP/UDP/IP protocols and requires complex stream setup. With the MD1230A, up to 256 transmit streams can be defined and combined for each transmit port. Any data streams can be repeated any specified number of times. Convenient UDP traffic configuration parameters are provided to facilitate typical traffic generation.

In addition, real voice or video traffic can easily be captured from a live network, stored, and retransmitted. Nanosecond precision adjustments in the transmit packet gaps allow you to precisely control and test the ability of networks and network devices to handle various traffic loads.

Traffic Monitoring and Traffic Mapping The MD1230A family's unique traffic monitor and traffic mapping functions provide visibility into the traffic distribution on the network that is being monitored. VoIP networks often contain undetected and unaccounted for signaling traffic. The MD1230A's visual traffic pairing in its Traffic Mapping display allows a user to easily view all traffic



source/destination pairs by source and destination addresses. The Traffic Monitor real time display shows counts by Ethernet address, IP address, or protocol types for up to 64 communicating partners.



Protocol Decode and Analysis Each Gigabit Ethernet and OC-3/12 PoS port on the MD1230A family has a dedicated capture buffer memory of 32 Megabytes for voice or other network data. OC-48 and OC-192 PoS ports each have 256 MB capture buffers. Powerful trigger and filter functions ensure that you capture only the data that

you want to analyze.

The unique optional Decode Module Powered by Sniffer Technologies adds decode capability for over 400 networking protocols in this captured data,

including all the protocols in the popular and highly regarded Sniffer Pro and the Sniffer Voice products. The protocols in this Decode Module software are updated periodically and currently include popular video protocols such as MPEG-2 and voice protocols such as SIP, MGCP, H.323, and SCCP. Decodes for soon to be popular voice protocols such as TRIP, M2PA, and M3UA are also provided.

The optional Expert Analysis Module Powered by Sniffer Technologies constructs a database of voice or video network objects from the traffic that it sees and presents it concisely in its Expert display. Using this



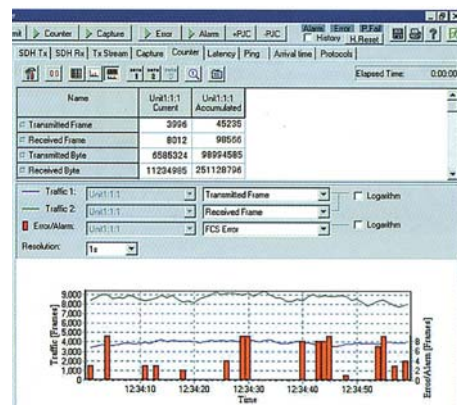
information, it automatically detects and alerts you to potential network problems:

- Symptoms indicating that a threshold has been exceeded
- Diagnoses based on several symptoms analyzed together or high recurrences of specific symptoms

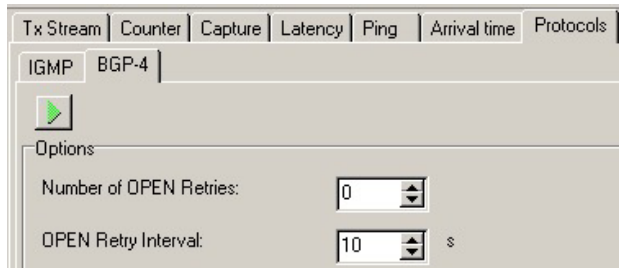
Specific VoIP Protocols Supported by Decode and Expert Analysis Modules

- H.323 version 2.0, including:
 - H.225 version 2.0
 - RAS version 2.0
 - H.245 version 3.0
- MGCP version 1.0 (decode only)
- SIP version 2.0
- RTP and RTCP version 2.0
- SCCP -- Skinny Client Control Protocol version 3.1.1
- SAP/SDP version 1.0 (decode only)
- Megaco (decode only)

QoS Transmit and Monitoring Quality of Service (QoS) coding based on either IEEE 802.1D (formerly 802.1p) or DiffServ (RFC2544 DSCP) can be specified in all transmitted data streams. The same QoS parameters can be measured in all received data, whether generated by MD1230A family products or not. Powerful user-defined filter functions allow you to count specific packets that are meaningful for your application.



Architecture Benefits The architecture of MD1230A family products uniquely lends itself to next generation VoIP network testing as the standards are



completed. Future voice protocols such as TRIP largely mimic the behavior and operation of routing protocols such as BGP4 that the MD1230A already emulates. When service providers begin deploying

TRIP or some similar protocol for IP level interconnect of VoIP networks, Anritsu has the capability to be ready with unique emulation solutions for those protocols.



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