



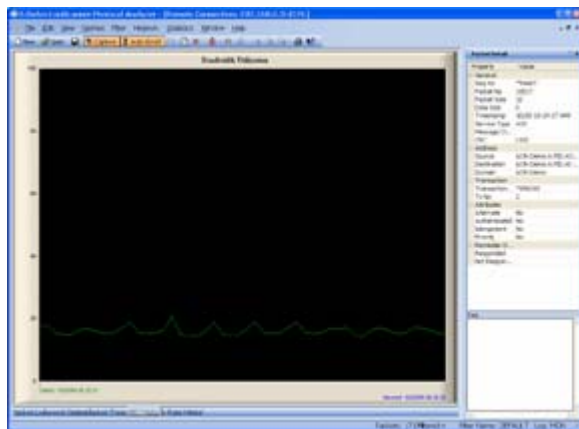
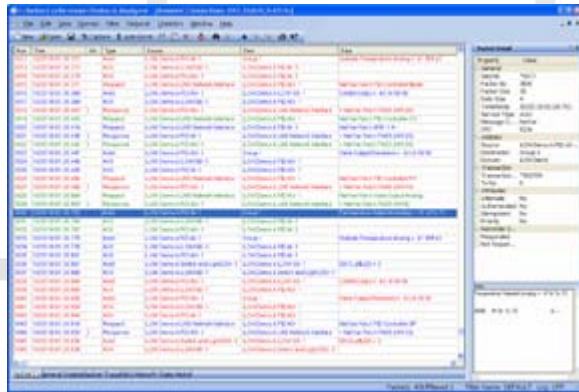
LonScanner™
PROTOCOL ANALYZER



LonScanner™ Protocol Analyzer

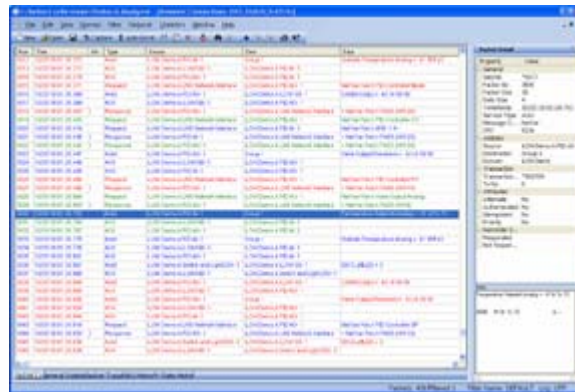
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LonScanner Introduction



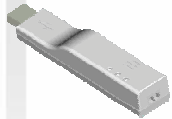
- Captures, analyzes, characterizes, and displays all ANSI/CEA-709.1 packets on a channel
- Supports the most popular 709.1 network interfaces
- Runs on Windows XP, Windows Server 2003, and Windows 2000
- Simplifies packet log interpretation with a sophisticated transaction analysis system
- Displays device and network variable names in addition to network addresses
- Formats network variable values
- Displays comprehensive network statistics data

Packet Capture and Display



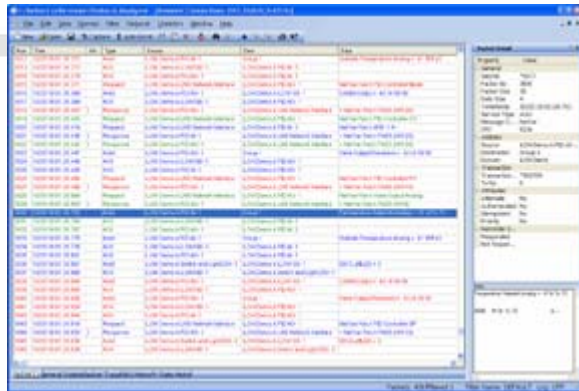
- Collects all ANSI/CEA-709.1 packets on a channel into log files
- Displays summary log and packet details for one packet in one view
- Interprets all protocol-related fields
- Displays an active log or a log file
- Optionally auto-scrolls live data
- Time stamps all packets
- Multiple logs and network interfaces can be active at the same time
- Supports receive filters that reduce the amount of logged data to help isolate problems quickly
 - Filter packets to or from specific devices or network variables, and for packets using selected ANSI/CEA-709.1 protocol services

Supported Network Interfaces



- U10 and U20 USB Network Interfaces for all PCs
- PCC-10 PC Card Network Adapter for laptop use
 - Standard or protocol analyzer version
- PCLTA-21 PCI Network Adapter for desktop use
 - Standard or protocol analyzer version
- *i.LON*® 100 Internet Server for local and remote monitoring via a LAN, WAN, or the Internet
 - Monitor multiple remote sites simultaneously
- *i.LON* 600 LonWorks®/IP Server for monitoring a LonWorks or IP-852 channel
 - Monitor multiple remote sites or channels simultaneously
- All interfaces can be shared with LNS applications including the LonMaker™ Integration Tool

Transaction Analysis System



- Associates related packets by color-coding
 - Acknowledgements with acknowledged messages
 - Responses with requests
 - Repeats
- Simplifies packet log interpretation

Naming and Formatting

10/20 18:01:29.038

Ackd

iLON Demo.A.Switch and Light.DIO- 2

iLON Demo.A.iLON100- 1

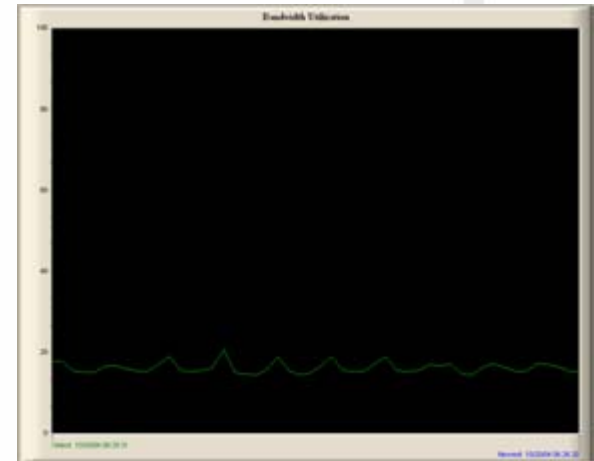
DIO2LeftLED = 0

- Displays device addresses, network variable addresses, and network variable data in raw form
 - Use the LonScanner tool with any network installed by any installation tool, with self-installed networks, and with pre-configured networks
- Supports logical names for devices and network variables
 - User can manually enter names
 - User can import names from an LNS database
 - Device names can include subsystem name
 - NV names can include functional block name
- Formats network variable data based on LONMARK[®] standard & user resource files
 - Simplifies data interpretation
 - For example: displays "84.9" or "29.4" instead of "2940" for a temperature value

Network Statistics

Name	Property
Configuration	
Update State	Update ON
Update Interval	1 sec(s)
Time	
Start Time	17:58:25.000
Prev Update Time	18:25:07.600
Update Time	18:25:08.599
Snapshot Statistics	
Rate	
BandWidth Utilization	14.5124%
Error Rate	0.0000%
Packets Per Sec	32.0
Priority Packets Per Sec	0.0
Non-Priority Packets Per Sec	32.0
Filtered Packets Per Sec	0.0
Error Packets Per Sec	0.0
Avg Packet Size	13.2 bytes
Maximum	
Max BandWidth Utilization	100.0000%
Max Error Rate	3.1250%
Max Avg Packet Size	14.9 bytes
Max Packets Per Sec	456.5
Max Priority Packets Per Sec	0.0
Max Non-Priority Packets Per Sec	456.5
Max Filtered Packets Per Sec	1.0
Max Error Packets Per Sec	1.0
Cumulative Statistics	
Elapsed Time	00:26:43.599
Average	
BandWidth Utilization	12.7076%
Error Rate	0.0155%
Avg Packet Size	28.1
Packets Per Sec	0.0
Priority Packets Per Sec	28.1
Non-Priority Packets Per Sec	0.0
Filtered Packets Per Sec	0.0
Error Packets Per Sec	13.2 bytes
Total	
Total Packets	45046
Total Priority Packets	0
Total Non-Priority Packets	45039
Total Filtered Packets	4

Packet Type	Count	Percentage
Good Packets		
Acid	46333	99.99%
Ack	12169	26.26%
Request	20116	43.41%
Response	7006	15.12%
Challenge	6990	15.08%
Reply	0	0.00%
Unacid	0	0.00%
Unacid Repeat	12	0.03%
Reminder	0	0.00%
Request/Remi...	0	0.00%
Ack/Reminder	40	0.09%
Unknown	0	0.00%
Bad Packets		
CRC Errors	0	0.00%
Timeout	0	0.00%
Packets Too S...	0	0.02%
Packets Too L...	0	0.00%
Preamble Too ...	0	0.00%
Preamble Too ...	0	0.00%



- **Statistics include:**
 - Total packet counts
 - Packet count by type
 - Error packet counts—identify network problems quickly
 - Network loading—identify network overload
- **Displays network loading and error rate data in long-term trend graphs**
 - Provides easy identification of excessive network traffic or errors

LonScanner Unique Features

- The following features are unique to LonScanner:
 - *i*.LON 100 and 600 support
 - Network interface sharing with LNS applications
 - Trend graphs
 - Comprehensive statistics
 - Simple LNS names import
 - UNVT formatting based on LONMARK resource files
 - Transaction color coding
 - Circular log files
 - Bookmark descriptions
 - AutoScroll log control
 - Powerful find tool

Ordering Information

- Download the free demonstration version from www.echelon.com/lonscanner
 - Or request a free demonstration version CD
 - Demonstration version limitations:
 - Discards every third packet
 - Operates for 10 minutes at a time
 - Will not save packet logs
 - Will only display 20 packets from a packet log
- To activate a demonstration version and get all features, purchase one of the following keys:
 - Model 33110-305 LonScanner Professional Edition Activation Key
 - Works with or without LNS Turbo Edition
 - Model 33110-306 LonScanner LNS Turbo Edition Activation Key
 - Requires separate purchase and installation of LNS Turbo Edition
- Two editions available with CDs and pre-paid keys:
 - Model 33110-301 LonScanner Professional Edition
 - Works with or without LNS Turbo Edition
 - Model 33110-302 LonScanner LNS Turbo Edition
 - Requires separate purchase and installation of LNS Turbo Edition