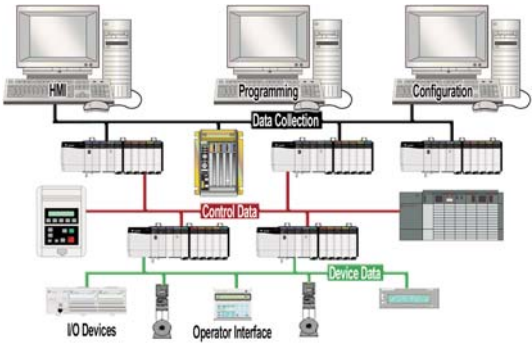


# NetDecoder<sup>TM</sup> DH+

## Industrial Communication Analyzer



**Optimize Networks. Isolate Comm Problems. Avoid Downtime.**



## On DH+ Networks, Timing is Everything

Until now, troubleshooting DH+ networks has been anybody's guess. NetDecoder DH+ changes that. Frontline has worked closely with Rockwell Automation and their customers to build a tool that is specifically designed to isolate DH+ problems so that you can avoid downtime and improve output.

The issue with DH+ has always been that it is difficult to understand what is actually occurring on your network. Often, as long as the production line isn't down, nobody sees the need to risk changing the network configuration. The problem with this "if it ain't broke, don't fix it" approach is that it can lead to reduced output, intermittent operations, or even worse, total downtime.

NetDecoder provides a window into your DH+ network performance with both high level views and individual node performance and activity stats.

## Do You Share These DH+ Problems?

- Many companies don't know how close to failure their DH+ networks are, but they do understand the cost of downtime.
- Because network performance can slowly decay over time, warning signs such as the slowing of button responses get ignored. It's too late when an empty bottle gets capped and the soda winds up on the floor.
- DH+ networks grow over time - sometimes years. People come and go, leaving an undocumented network that nobody actually understands.
- DH+ networks often are not designed to handle non-responders. Intermittent non-responding devices can have a significant impact on throughput.
- HMI software, while easy to use, often generates inefficient network traffic.
- Unneeded network messages = poor network performance = reduced productivity.

**NetDecoder: Product Highlights**

### Product Summary

- PC-based Industrial Communication Analyzer
- Control Network Sniffer and Protocol Analyzer
- Supports Serial, Ethernet & Fieldbus

### Suggested Uses

- Check network health before adding a new device or changing a configuration.
- Conduct a survey to determine network and node performance.
- Diagnose device communication problems.
- Survey and benchmark existing networks to track network performance over time.
- Commission new networks and network expansions.

### Device Statistics

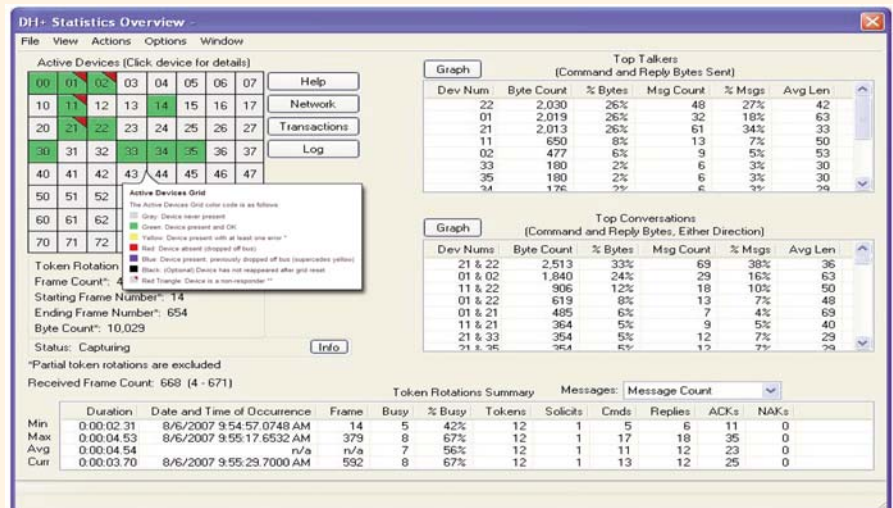
- Top Talkers
- Top Conversations
- Top Listeners
- Node Transaction Summary

### Network Statistics

- Token Rotation Timing
- Network Event Log
- Token Rotation History
- Token Utilization

## NetDecoder: Built for DH+ Troubleshooting

In an environment that demands deterministic control and information exchange, understanding the network activity is critical. NetDecoder DH+ quickly helps you understand the loading, throughput, and overall performance of DH+ networks as well as the DH+ protocol itself.



# DH+ Protocol Decoding

- Summary of Messages Sent and Received with Timing
- Message Frame is Decoded into Text
- Protocol Errors have Red Frame Numbers
- Message Displayed in Binary, Octal, Hex and ASCII
- Display filters include: Pre-Set Filters, Node Information Filters, User Defined Complex Filters
- Side-by-Side Comparisons with Multiple Display Windows

**Transactions Summary**

Message Count

Apply settings to all transaction windows

Transactions where other devices sent commands to each of the following devices:

Other Devices:	11	14	21	22	30	33	34	35
-> Sent Cmds To	14	0	51	0	0	0	0	0
<- Recvd Cmd ACKs From	14	0	51	0	0	0	0	0
<- Recvd Cmd NAKs From	0	0	0	0	0	0	0	0
-> Sent Replies From	13	0	54	0	0	0	0	0
-> Sent Reply ACKs To	13	0	54	0	0	0	0	0
-> Sent Reply NAKs To	0	0	0	0	0	0	0	0
Min Response Time	0.00:02.00	0.000 ms	0.00:01.78	0.000 ms	0.000 ms	0.000 ms	0.000 ms	0.000 ms
Max Response Time	0.00:03.14	0.000 ms	0.00:04.15	0.000 ms	0.000 ms	0.000 ms	0.000 ms	0.000 ms
Avg Response Time	0.00:02.59	0.000 ms	0.00:02.93	0.000 ms	0.000 ms	0.000 ms	0.000 ms	0.000 ms

Transactions where other devices received commands from each of the following devices:

Other Devices:	11	14	21	22	30	33	34	35
<- Recvd Cmds From	0	0	7	48	0	6	6	6
-> Sent Cmd ACKs To	0	0	7	48	0	6	6	6
-> Sent Cmd NAKs To	0	0	0	0	0	0	0	0
-> Sent Replies To	0	0	9	52	0	6	6	6
<- Recvd Reply ACKs From	0	0	9	52	0	6	6	6
<- Recvd Reply NAKs From	0	0	0	0	0	0	0	0
Min Response Time	0.000 ms	0.000 ms	0.00:02.14	0.00:01.78	0.000 ms	0.00:01.93	0.00:01.99	0.00:02.06
Max Response Time	0.000 ms	0.000 ms	0.00:03.14	0.00:04.15	0.000 ms	0.00:03.10	0.00:03.04	0.00:03.04
Avg Response Time	0.000 ms	0.000 ms	0.00:02.75	0.00:02.86	0.000 ms	0.00:02.52	0.00:02.55	0.00:02.55

Overview Help

Frame Display: FTS4Control Protocol Analyzer for DH+ Demo

Summary: DH+ (Hex) with Auto-Translate

Unfiltered	AB PCCC	Data	DH+ (Aspxc)
316	001	021	Reply F
664	002	001	Command F
534	022	001	Command F
430	001	022	Reply F
430	022	021	Command F
482	021	022	Reply F
210	022	021	Command F
250	021	022	Reply F
16	001	022	Reply F
446	022	021	Command F
523	021	022	Reply F

Total Frames: 672 Frames Filtered In: 252 Frame #s Selected: 482 (1 total)

# DH+ Transaction Summary

- Individual Node Performance Information
  - Min, Max and Avg. Response Times
  - Counts of Commands Sent
  - Counts of ACKs and NAKs
- Displayed by
  - Message Count
  - Message Count Percentage
  - Byte Count
  - Byte Count Percentage

## Outstanding Technical Support

Whether you need help using a basic FTS4Control product feature, want Frontline's explanation of the protocol, or have a question on using FrameDecoder to write a decode, you can be assured of a response that is friendly, thorough, and timely.

FTS4Control includes premium maintenance that keeps you up-to-date with the latest industry specifications.

**Get Control.**  
**NetDecoder™**  
 Industrial Communication Analyzer  
 FOR MORE GO TO [WWW.FTE.COM](http://WWW.FTE.COM)

## FrameDecoder Developer Kit included

Write custom decoders or modify existing decoders.

## User List (in part)

- ▶ Rockwell Automation
- ▶ Invensys
- ▶ General Motors
- ▶ ExxonMobil
- ▶ Northrup Grumman
- ▶ Weyerhaeuser
- ▶ Sunoco Logistics
- ▶ Cooper Power Systems
- ▶ Duke Energy
- ▶ Enbridge

## NetDecoder Library

Modbus RTU, Modbus ASCII, Modbus/TCP, DNP3 over serial, DNP3 over EtherNet, BSAP, DF1/PCCC, EtherNet/IP, CSP, DH-485/PCCC, DH+, ControlNet, CIP, DeviceNet, FrameDecoder Developer Kit

## Protocol Analysis Expertise

With over sixteen years of experience developing protocol analysis tools, and an installed base of over 30,000 analyzers, Frontline is a proven protocol analyzer industry leader. FTS4Control is a member of the growing family of Frontline Test System® (FTS®) protocol analyzers, each of which incorporates a common user interface and the FrameDecoder protocol-decoding engine. FTS analyzers support serial, Ethernet, Bluetooth, ZigBee®, and numerous industrial protocols and buses.

## Minimum PC Requirements

- ▶ 1GHz Pentium Processor or equivalent
- ▶ Windows XP
- ▶ 512 MB RAM
- ▶ 50 MB Hard Disk Space
- ▶ Ethernet port for sniffing Ethernet
- ▶ 1 or 2 serial ports for sniffing serial
- ▶ Fieldbus protocols may require additional hardware

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