NetDecoder[™] Industrial Network Monitor

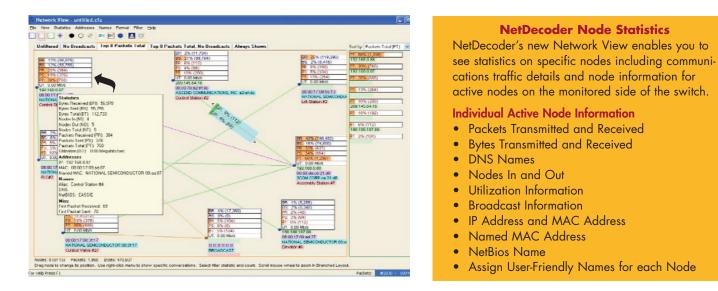


frontline

NetDecoder's New Network View For Ethernet Provides a Window Into Network Activity

SCADA, Modbus, Ethernet & ControlNet

Frontline's NetDecoder Communications Analyzer is a PC based Industrial Control and SCADA protocol, data and timing analyzer. NetDecoder is designed to monitor, identify and isolate communications and timing issues on devices utilizing Serial, Ethernet and Industrial Bus communications. Benefiting from this tool are Industrial and SCADA engineers, System Integrators, Network Engineers, Maintenance Engineers and Field Service personnel.



NetDecoder Does Communications Message Decoding for Serial, Ethernet and Industrial Bus

Protocol Decoding - Frame Display

The detailed information in the **Frame Display** window is presented clearly and with as much, or as little, detail as you need.

- Summary Information for Messages Sent and Received
- Message Frame is Decoded into Text
- Protocol Errors Identified with Red Frame Numbers
- Message is Shown in Binary, Octal, Hex and ASCII
- Capture Filters Limit the Amount of Data Captured
- Display filters include: Pre-Set Filters,
 - Node Information Filters, User Defined Complex Filters
- Side-by-Side Comparisons with Multiple Display Windows
- For Custom Decodes use the included FrameDecoder[®] Development Kit

Ele Edit Yew Format Filter Options Window Help					
🗞 🚰 🔎 🕑 🧤 🦞 🖓 🥰 🗄	🛍 🥃 🛄 📖 📈 🕉 🛍	Filter: Include frames with	vere the protocol	"Hands-Free" exists	
	ands-Free Baseband with	Auto-traverse			
Unfiltered Baseband LMP Bluetooth FHS L2CAP	SDP RECOMM AVDTP AVDTP S	ignaling AVDTP Media H	ands-Free A	20P	
B Frame# Role A Hands-Free data	AT Cred	I Response	Fram	Delta	Timestamp *
80 S (HF) 3 AT+BRSF=24.	Retrieve AG Supported Features		28		3/12/2008 4:38:33.4737
81 M (AG) 3+BBSF:503.		Retrieved AG Supported	d Feat 31	00.00.00.024373	3/12/2008 4:38:33:4980
82 M (AG) 3 0K		Success	24	00.00.00.005000	3/12/2008 4:38:33:5030
108 M (HF) 1 AT+CIND=?.	Get supported indicators		28	00.00.00.432817	3/12/2008 4:38:33.9359
109			145	00.00.00.023126	3/12/2008 4:38:33.9590
I10 *S (AG) *1 *_+CIND: ["service",[0-1]],["callh	ekd",[0-2]],[Indicators supported	93	00.00.00.002500	3/12/2008 4:38:33.9615
111 \$ (AG) 10K		Success	24	00.00.00.002500	3/12/2008 4:38:33.9640
I12 M (HF) 1 AT+CIND?.	Get indicators' status		27	00.00.00.238125	3/12/2008 4:38:34.2021
- Frame 81: [Master] Len+31	B 00001111 10100100 0101010	0.10101110.00000010	10100011 1	1011011 00000	
H-Batebard	N 00010010 00000000 0100000		111111111	0011011 00000	001 00001101
H-L2CAP	R 00001010 00101011 0100001				
E- BECOMM	9 00110011 00001101 0000101			0111010 00110	101 00110000
- Bole: Master	2				
- Address: 3	(2)				
Address: 0x0b	E				
- Frame Type: Unnumbered Info with Header Check.	5 Of a4 54 ac 02 a3 db 02 0				
- Pol/Final Bit 1	0 0d 0a 86	1 12 00 41 00 00 II	10 01 00 0	a 20 42 52 53	46 38 35 30 33
- Length Extension: Not Extended	ou da as				
- Length 13					
- Credits: Given 1 (20) S1(14)M FCS: 0x86	a.				
- FCS: 0x86 El-Hando-Free:	n c				
- Role: Master (Audio Gateway)					
- Address 3	SATA ARSON AND FRANC				
Response: Retrieved AG Supported Features	BUT HIT RECEIPTING TO A RECEIPTING	HBRSE: 503 AVG			
AG Supported leafure:	8				
: Three way calling: Supported	ĉ				
- : EC and/or NB function: Supported	THE				
- : Voice recognition function: Supported	R				
- : In-band ring tone capability: Not Supported	2				
- : Attach a number to a voice tag. Supported	1				
 Ability to reject a call: Supported 					
- : Enhanced call status: Supported					
- : Enhanced call control: Supported					
- : Extended error result codes: Supported					
	F				
Total Frames: 3,827 Frames Filtered In: 16 Frame #s Selected:	81- (1 hotal) [3 hotes]				
The state of the second st	institution for a transf				

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

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Active Devices (Click device for details)							Graph (Command and Reply Bytes Sent)													
00	01	02	03	04	05	06	07	Help			Dev N	um	Byte C	-	% Bytes	Msg Cour		sas	Avg Len	1
10	11	12	13	14	15	16	17	Network			22			2,030 21		4		27%	42	
									Ξ.			01		019	26%			18%	63	
20	21	22	23	24	25	26	27 TI	ansactions				21		,013	26%	6		34%	33	
-		-			05	00	07	Log				11		650	8%		3	7%	50	
30	31	32	33	34	35	36	37	LOg				02		477	6%		9	5%	53	
40	41	42	43	41	45	46	47					33		180	2%		6	3%	30	
			45	17	40	40					-	35		180	2%		6	3%	30	
50	51	52	5		-	dia a di	Calid					5/4		116			n			
60	61	62		Active Devices Grid												nversations				
			H Th	ne Ac	tive D	evices	Grid cold	r code is a	s fol	lows:				mmand	and Reply	y Bytes, Eith	er Direct	ion)		
70 71 72 Gray: Device never present										Count	% Bytes	Msg Cou	unt %	Msgs	Avg Len					
Token Botation										2,513	33%		69	38%	36					
Frame Count*: 4									- 1	1,840	24%		29	16%	63					
Yellow: Device present with at least one error *										906	12%		18	10%	50					
Starting Frame N Red: Device absent (dropped off bus)										619	8%		13	7%	48					
Ending Frame N										485	6%		7	4%	69					
Byte Count*: 10 Blue: Device present, previously dropped off bus (supercedes yellow)							llow)	364	5%		9	5%	40							
Status: Capturin Black: (Optional) Device has not reappeared after grid reset									354	5% 5%		12	7%	29						
		en rot						non-respo			, gra rece			45.0					~	
lecei	ved F	rame			8 [4 -	-														
The second se									ations Summary Messages: Message Count 👻											
		Durat					of Occurre			Busy	% Busy	Tok		Solicits	Cmds	Replies	ACKs	NAK		
din		00:02					1:57.0748		14	5	42%		12	1	5	6	11)	
Max		00:04		8/	6/200	07 9:55	5:17.6532		379	8	67%		12	1	17	18	35)	
Avg Curr		00:04							n/a	7	56% 12 67% 12			1	11	12	23		2	
	0:	00:03	3.70	- 8/	6/200	JZ 9:55	5:29.7000	AM 5	592	8			12	1	13	12	25)	

Data Highway Plus Statistics Overview Display

Active Device Grid

- Identify Active Devices
- Identify Devices with Problems

Device Statistics

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

Network Statistics

- Token Rotation Timina
- Network Event Log
- Bytes Sent
- Busy Tokens

Application Notes

With more Serial to Ethernet converters being utilized, did you know that you can run both the NetDecoder Serial and Ethernet analyzers at the same time to view data on both sides of the converter.

With some serial applications running different transmit and receive baud rates, did you know that you can set the NetDecoder Serial Analyzer to work with a different baud rate on each serial port.

Protocol Analysis Expertise

With over sixteen years of experience developing protocol analysis tools, Frontline (est. 1985) is a proven protocol analyzer industry leader. NetDecoder 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[®], USB, and numerous industrial protocols and buses.

ecoder: Monitor Your Mission ical Communications Serial

Our NetDecoder product includes Serial, Ethernet, and industrial bus protocols listed plus serial port Spy capability, serial speeds up to 921.6K bps, and one year of Premium Maintenance.

The Frontline FrameDecoder® Developer Kit is also included to assist you in writing your own custom decoders.

Your Application

Rockwell Automation

Industrial Bus DeviceNet Data Highway Plus DH-485/PCCC ControlNet

BSAP DF!/PCCC DNP3 over serial Modbus ASCII Modbus RTU

Ethernet CSP DNP3 over Ethernet **General Ethernet**

NetDecoder Protocols

DF1/PCCC, EtherNet/IP, CSP, DH-485/PCCC, ControlNet, DH+, DeviceNet

DNP3

Modbus

User List (in part)

- Rockwell Automation
- Sunoco Logistics
- General Motors
- ExxonMobil
- Northrup Grumman
- Weyerhauser
- DTE Energy
- Cooper Power Systems
- Duke Energy
- Enbridae

Outstanding Technical Support

Whether you need help using a basic NetDecoder 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.

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

ModBus RTU, Modbus ASCII, ModBus TCP PC System Requirements

DNP3 over Serial, DNP3 over Ethernet

- Windows XP
- 512 MB RAM
- **50 MB Hard Disk Space**
- Ethernet port for sniffing Ethernet
- 1 or 2 serial ports for sniffing serial
- Industrial bus may require additional hardware

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www.fte.com | sales@fte.com 1 (800) 359-8570 (U.S. & Canada)

+1 (434) 984-4500 FAX +1 (434) 984-4505 PO Box 7507, Charlottesville, VA 22906-7507 USA

EtherNet/IP Modbus/TCP ProfiNet