



GTX

Fibre Channel TraceView

The Extended Protocol Data Viewer

- Configurable, spreadsheet-oriented data display
- Movable data columns
- User-definable column contents
- Data navigation histograms
- Data decode for SCSI (fixed, tape, removable media), IP, FICON/SB2
- Extract data subsets in TraceView or ASCII formats
- Automatic data compression of saved files
- Operates on any NT computer—does not require GTX hardware
- View data from a colleague with free downloadable viewer

The screenshot displays the GTX TraceView application window. The main window shows a table of trace data with columns for time, count, OS, RCTL, DpCode, OS, DxD, P/L Summary, Bytes, RCTL, and D_ID. A specific entry is highlighted in red, indicating a CRC Error. Below the main table, an 'Inspector' window is open, showing a detailed view of the selected event. The Inspector window has columns for Event Word, Byte 0-3, Interpretation, ASCII, Error Description, and 1084 Values. The selected event is a CRC Error (EOF) at time 09:058.701.263. The bottom of the window shows a histogram and a waveform plot.

Bookmark	ts.ms_us_ns [Abs]	microseconds [Delta]	Count - OS - RCTL	Count - OS - RCTL	DpCode	OS	DxD	P/L Summary	Bytes	RCTL	D_ID
	08:372.308.237	7655.625	SOF3 - FC4Cnd	Read(10)	SOF3	9514	LUN = 0000000000000000...	68 FC4Cnd	0000E2		
	08:372.034.280	526.050	SOF3 - FC4Status		SOF3	9514	SCSI Status = Good, RLV ...	48 FC4Status	0000EF		
T CRC Error	08:381.368.8	8532.525	SOF3 - FC4Cnd	Write(16)	SOF3	9520	LUN = 0000000000000000	68 FC4Cnd	0000E2		
T	08:384.545.325	3178.512	SOF3 - FC4Cnd	Read(10)	SOF3	952C	LUN = 0000000000000000...	68 FC4Cnd	0000E2		
T	08:385.069.780	523.463	SOF3 - FC4Status		SOF3	952C	SCSI Status = Good, RLV ...	48 FC4Status	0000EF		
T	08:385.257.175	187.387	SOF3 - FC4Status		SOF3	9508	SCSI Status = Good, RLV ...	48 FC4Status	0000EF		
T	08:387.205.987	1949.813	SOF3 - FC4Cnd	Read(10)	SOF3	9538	LUN = 0000000000000000...	68 FC4Cnd	0000E2		

Event Word	Byte 0	Byte 1	Byte 2	Byte 3	Interpretation	ASCII	Error Description	1084 Values
Ordered Set	BC	85	56	56	SOF = SOF3	..VV		001111010 10101010 0110100101 0110100101
FC Header 001	06	00	00	E1	RdId = FC4Cnd; D_Id = 0000E1	...		010010100 100110100 100110100 001101000
FC Header 002	00	00	00	EF	S_Id = 0000EF	...		100110100 100110100 100110100 010110001
FC Header 003	08	29	00	00	Type = SCSI FCP; F_Ctl = 0x ; F_De = S_C_J ; F_De		110010100 100101001 100110100 100110100
FC Header 004	83	00	00	00	SEQ_Id = 83; DF_De = 00; SEQ_Cnt = 0000	...		110011101 011000101 011000101 011000101
FC Header 005	95	20	FF	FF	Dx_Id = 9520; Rv_Cid = FFFF	...		101010010 100110100 010100110 010100110
FC Header 006	00	00	00	00	PARA = 00000000	...		011000101 011000101 011000101 011000101
Payload 001	00	00	00	00		...		011000101 011000101 011000101 011000101
Payload 002	00	00	00	00	LUN = 0000000000000000	...		011000101 011000101 011000101 011000101
Payload 003	00	00	00	00	Task Attribute = SQ; TM TRM = TRM; OR; TM CLA =		011000101 011000101 011000101 011000101
Payload 004	24	00	00	87	SCSI Cnd = 'write(16); DPO = 0x; FUA = 0x; EBP = 0...	...		010101001 011000101 011000101 000110010
Payload 005	8F	27	00	00	LBA = 00878F27	...		010110010 111000101 100110100 100110100
Payload 006	08	00	00	00	TL = 0008; VS = 00; NACA = 0x; Flag = 0x; Link = 0x	...		110010100 100110100 100110100 100110100
Payload 007	03	00	00	00		...		110011011 011000101 011000101 011000101
Payload 008	00	00	10	00	FCP_De = 00001000	...		011000101 011000101 100100101 011000101
EOF	BC	85	75	75	EOF = EOF1	..VV	CRC Error	110010100 010011100 110010100 110110000

Fibre Channel GTX System TraceView

Navigating through Complex Fibre Channel Traffic

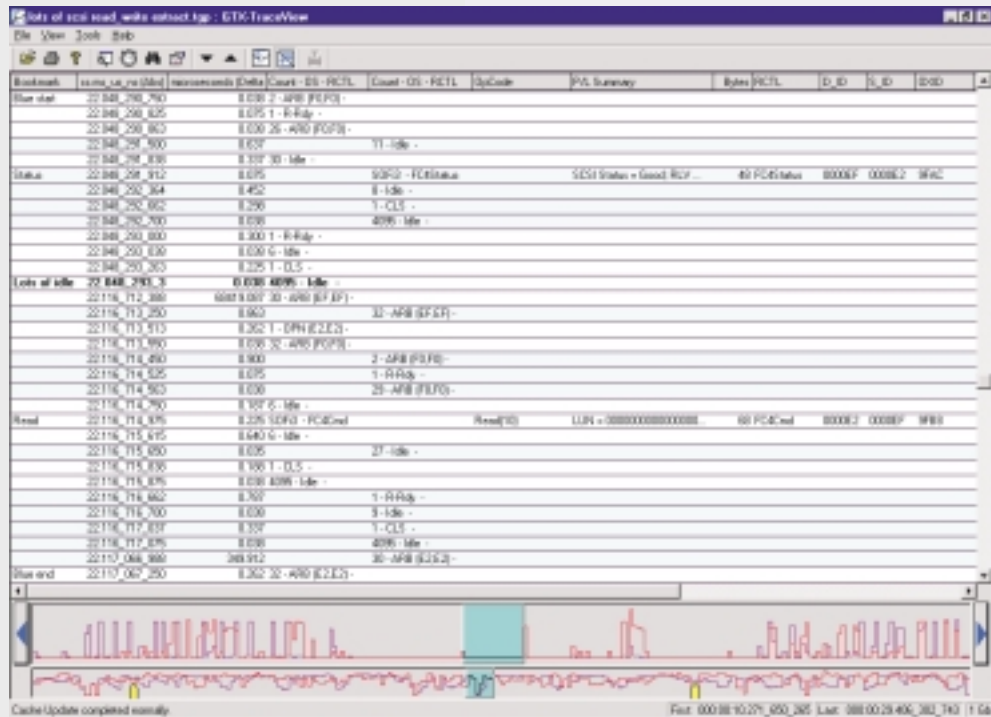
The primary function of a protocol analyzer is to provide tools which allow you to identify the root cause of a problem quickly. *GTX-TraceView* introduces a range of new tools for finding potential problem areas in captured Fibre Channel traffic.

The *GTX-Navigator* provides a graphical presentation of the captured traffic so repeating data patterns, data bursts and quiet periods can easily be found and examined in detail. The *GTX-Navigator* consists of two data density histograms at the bottom of the display. The lower histogram shows data density across the entire data capture, while the upper trace is a user-selectable expansion. The two views allow the user to quickly pick out interesting events, zoom to them, and display the individual event records on the spreadsheet display above.

The data trace, shown on the right, contains several quiet periods in a SCSI traffic stream. To look for possible causes, position the zoom window over the quiet period in the data to create an expanded view. Move the cursor in the expanded view to the point of interest. The width of the blue cursor in the upper view indicates the data shown in the spreadsheet. The spreadsheet data event, bookmarked as “Lots of idle”, shows that the link was idle for 68.4 milliseconds, indicating a possible delay in the host queuing data for the drive. Individual frames, bookmarked in the spreadsheet, correspond to the traffic before and after the quiet period. The *GTX-Navigator* also shows the position of the trigger in the data. The yellow extent marker tags designate the boundaries for extracting data to a separate disk file.

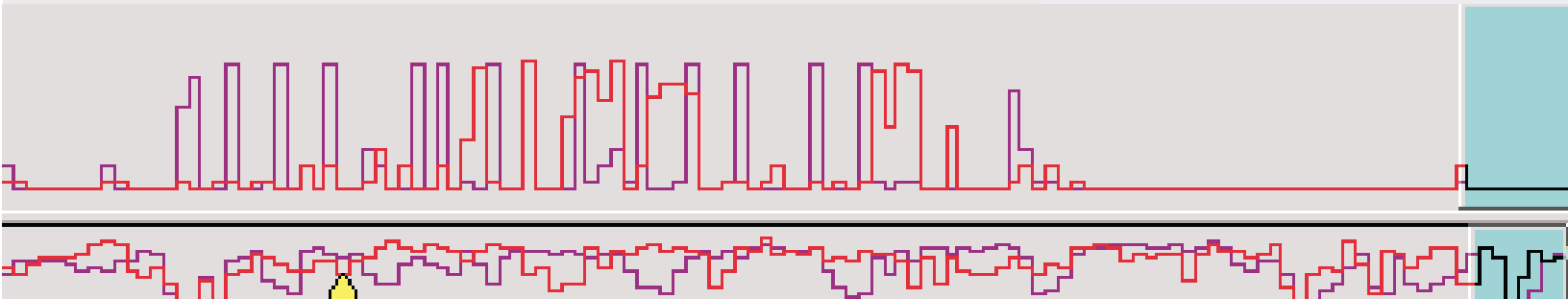
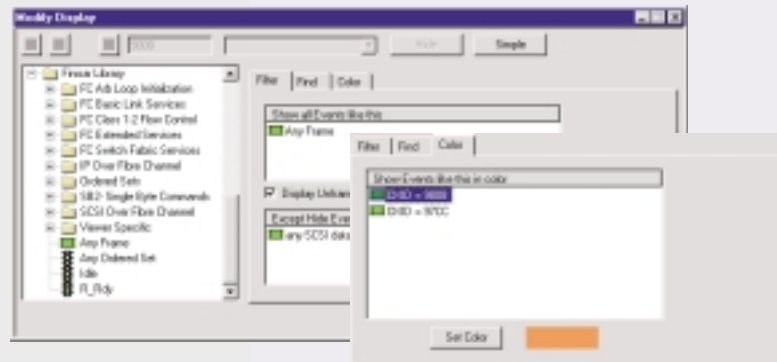
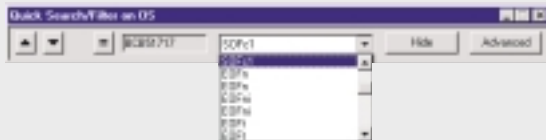
GTX-TraceView also provides a wide range of tools for finding, displaying and marking specific events or event types.

Use QuickSearch on any parameter field to find the next or previous occurrence of any allowed parameter in a column. This provides a fast, simple means of looking for related events like individual frames in a sequence. Mark events with bookmarks and notes by typing a name in the bookmark column.



Use the advanced Filter/Find/Color functions to identify more complex events. Uniquely describe frames and ordered sets with the Event Editor templates, then drag and drop into the function box. Use Find to highlight events. Use Filter to hide events. This is useful when you need to see only the errors, view all the frames in a single sequence, or examine exchanges between specific devices.

The Color function highlights specific events. In this case, specific OXID values will be displayed in a unique color.



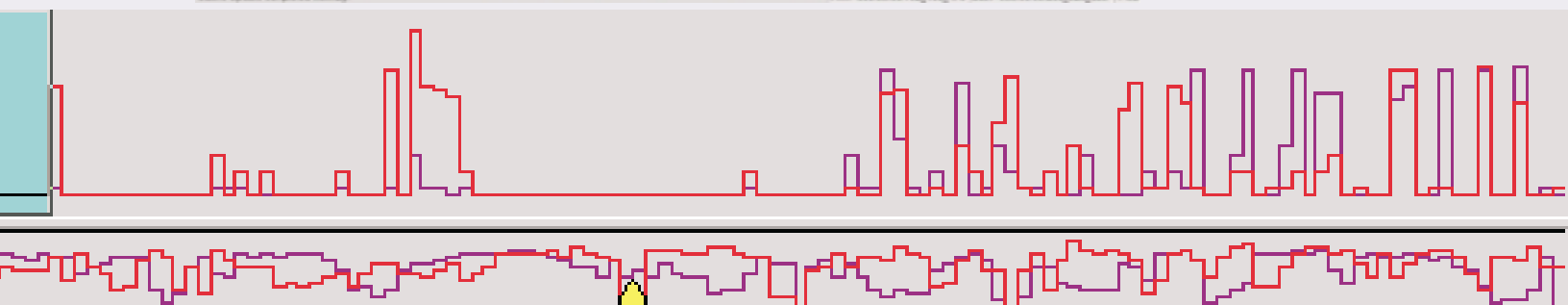
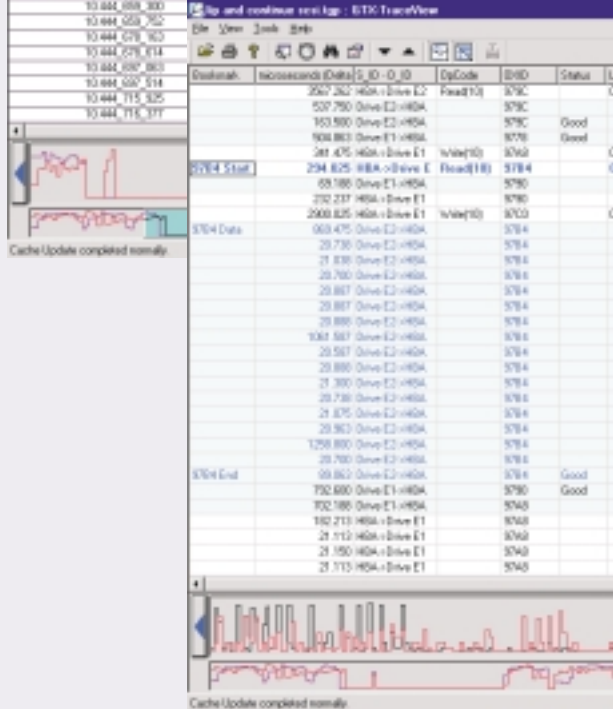
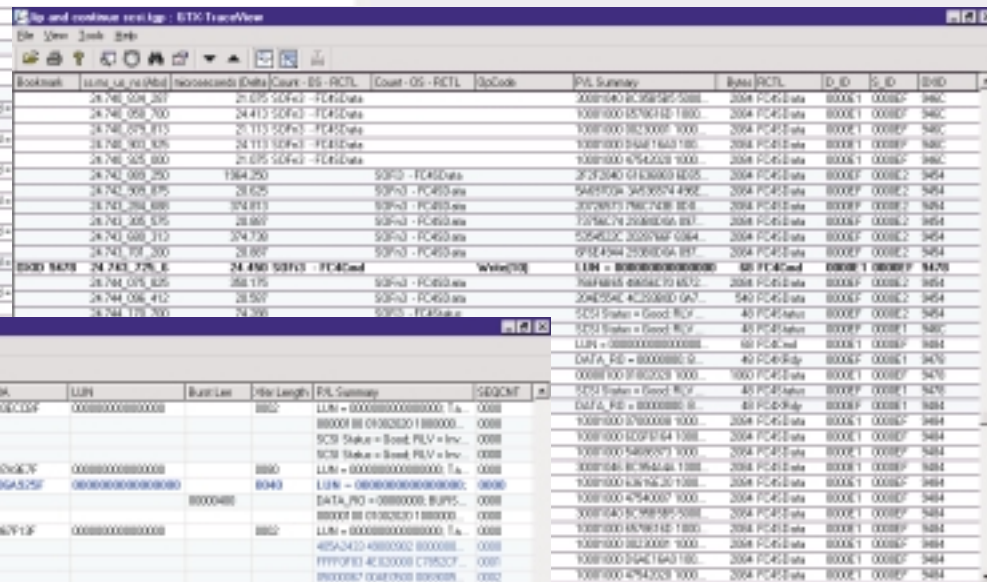
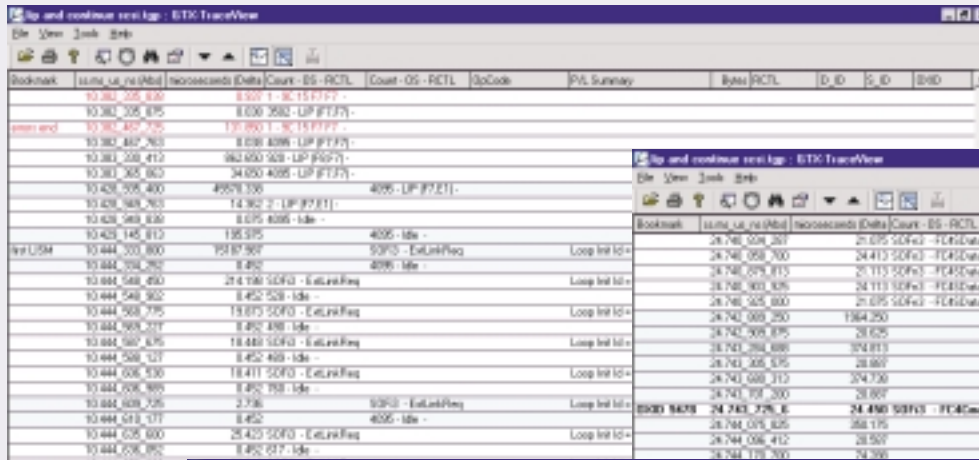
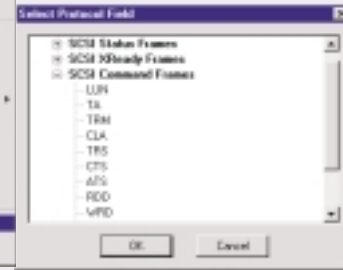
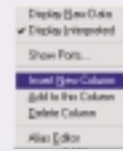
The Extended Gigabit Traffic System

Turning Complex Fibre Channel Traffic into Information

The *GTX-TraceView* data display is highly configurable. Arrange the screen to meet your needs and save your custom display formats for later use.

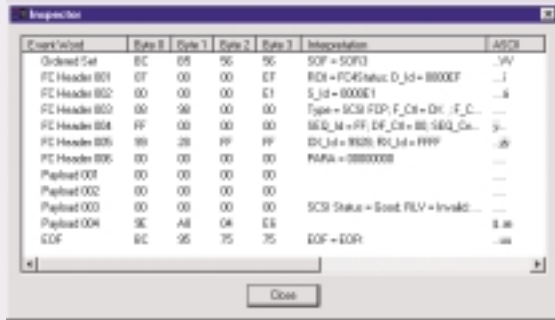
Add, delete, size, and reformat data columns. Create columns for Fibre Channel or embedded protocol parameters with the pull-down at the right. Add additional parameters to any column and select the data they contain by analyzer port. Simplify reading of the trace by renaming parameters such as port identifiers, source and destination IDs.

The three screens below show a range of possible screen formats. Fibre Channel, SCSI over Fibre Channel, and SCSI-only displays show the range of display formats possible with *GTX-TraceView*.



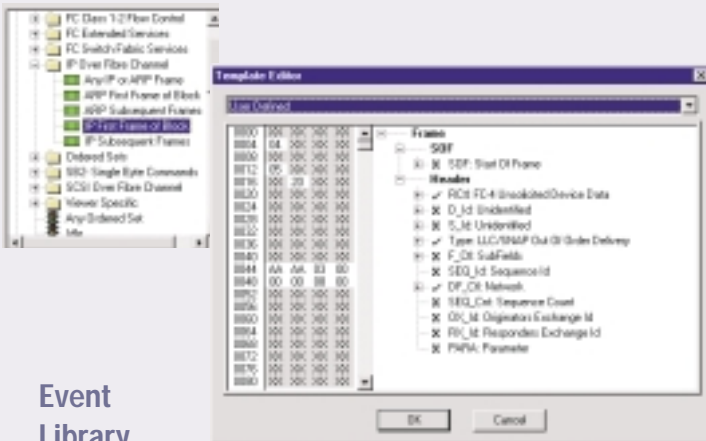
Fibre Channel GTX System TraceView

Additional GTX-TraceView Functions



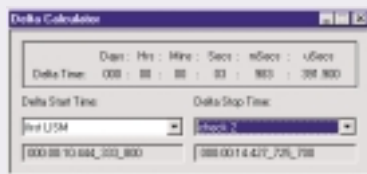
Frame and Ordered Set Details

View the details of frames or ordered sets with the Inspector. The Inspector shows events as hex bytes, protocol interpretations, ASCII, and 10-bit values. Errors are decoded (also see cover display).



Event Library

Trigger and realtime filter events for analyzer capture and Search & Filter events are saved in an Event Library. Events are created using a Fibre Channel and embedded protocol template editor, then assigned using a drag and drop approach.



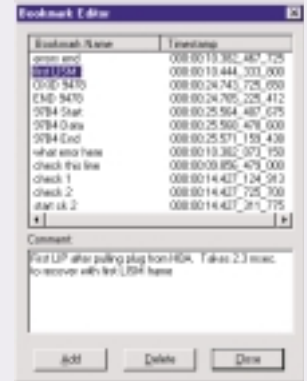
Delta Time

Delta time measurements are made with a Delta Calculator. Choose events by timestamp or bookmark and automatically calculate the delta time.

For a demonstration of the capabilities of Finisar Fibre Channel instrumentation, call Finisar or your local sales representative.

Modify Column Display Text

Rename any event in the spreadsheet or add bookmarks by typing over the displayed value or by using the Alias Editor function. Add notes to bookmarked events to document problems.



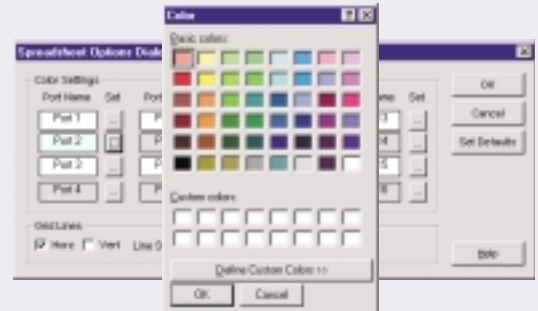
Time Formats

Time can be displayed in a range of formats, relative to any point in a data trace. Multiple Time columns can be created with each column having a different format.



Rename Values

Type over a value in the spreadsheet to alias it to a new name.



Color Port Events

A unique background color can be assigned to each port in a captured data trace. Each port is a simplex Fibre Channel data path. Horizontal and vertical lines can be added to the data spreadsheet.

Operating Environment

GTX-TraceView will operate on any NT computer with or without GTX Protocol Analyzer data capture hardware. GTX-TraceView will also open data capture on Finisar's GT Family 1 Gbit/sec Protocol Analyzers. GTX-TraceView is provided at no charge for analysis of data captured with GT or GTX Protocol Analyzers. Decode software for IP or FICON/SB2 are sold separately.