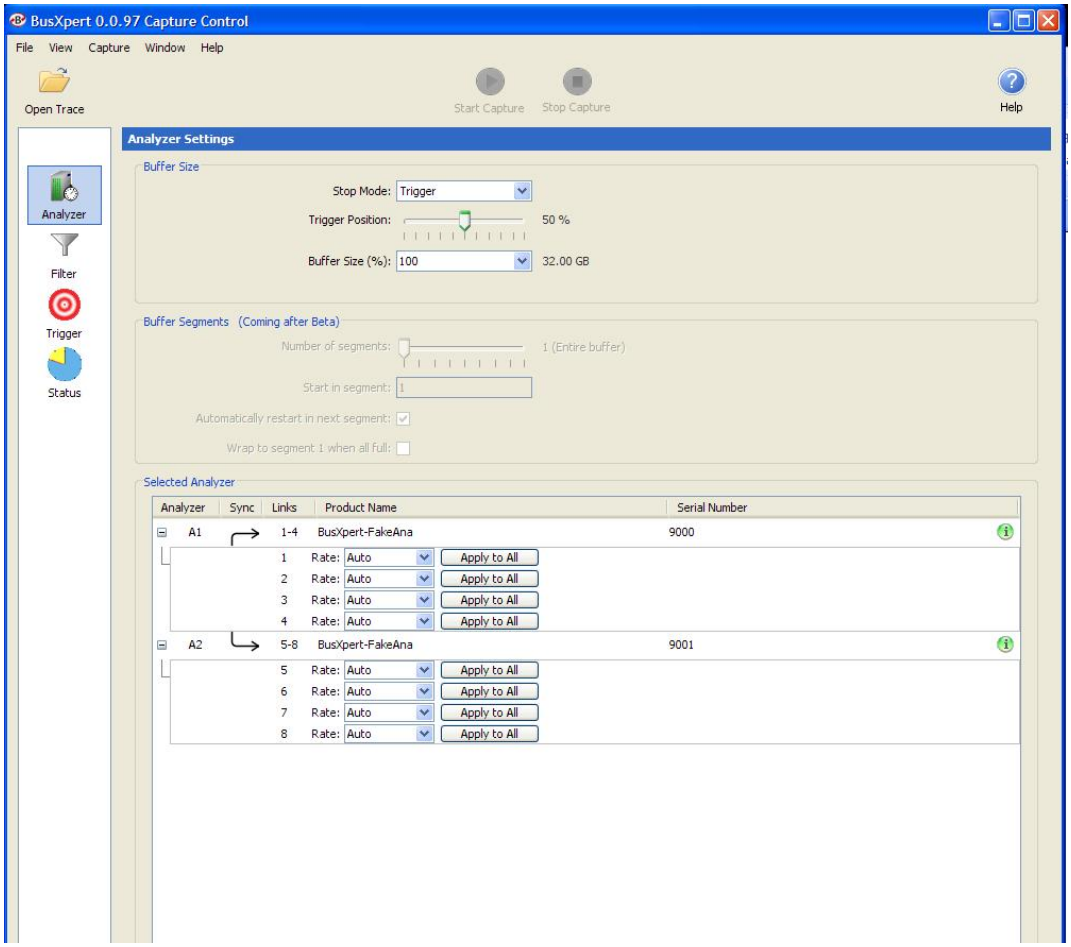
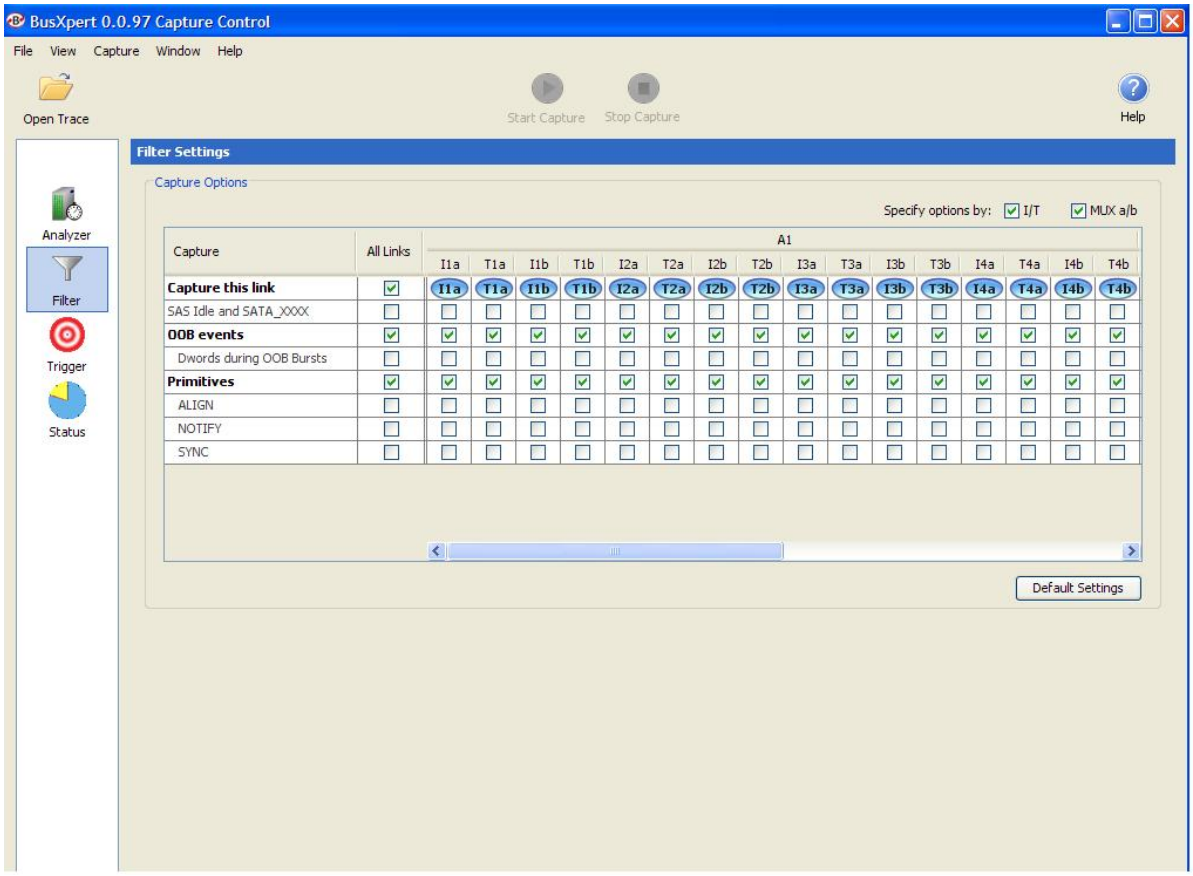
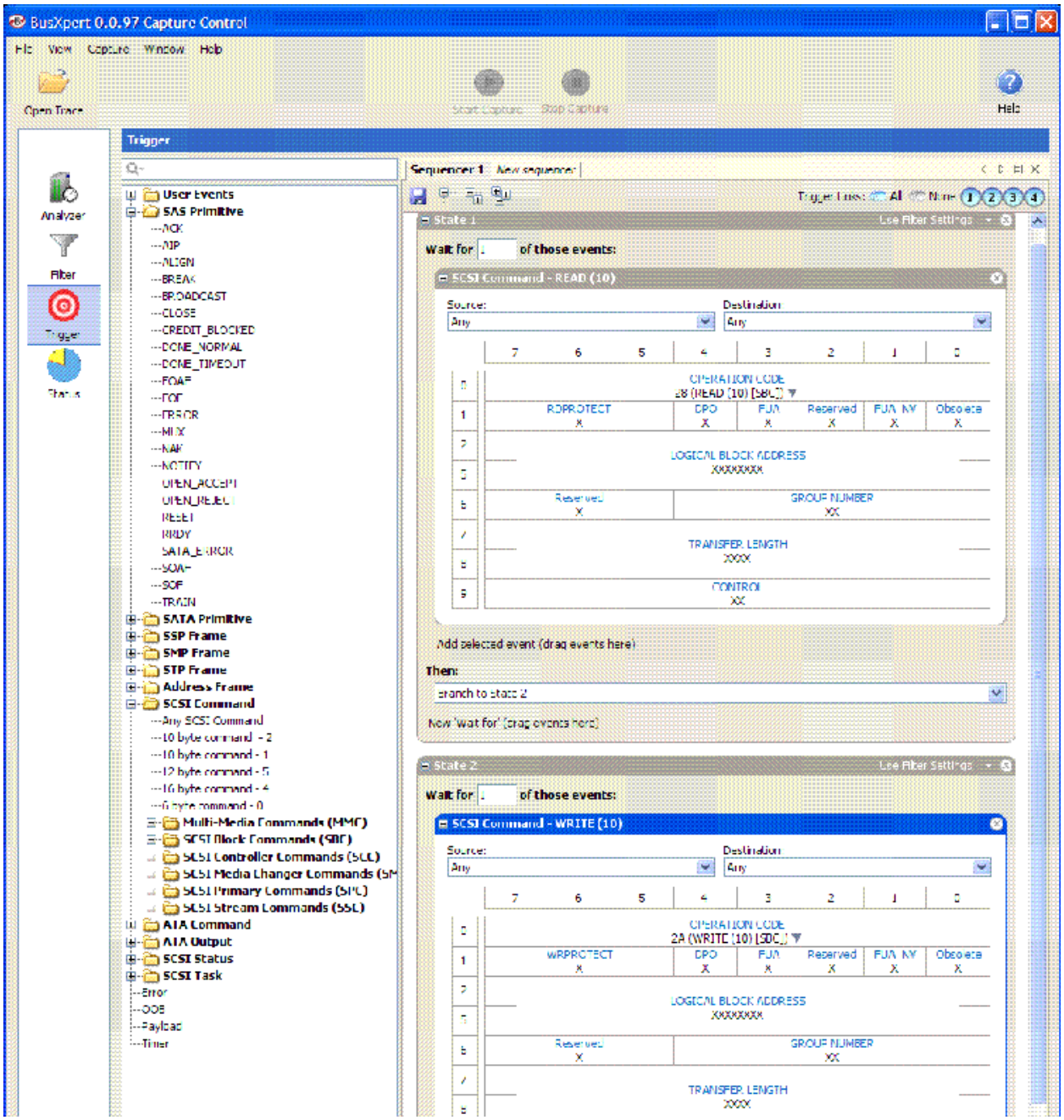
The Capture Control is the nerve center of ‘setting’ up the BusXpert for use. It’s where you setup the buffer size, buffer type, segmentation, pre-filters and triggers.



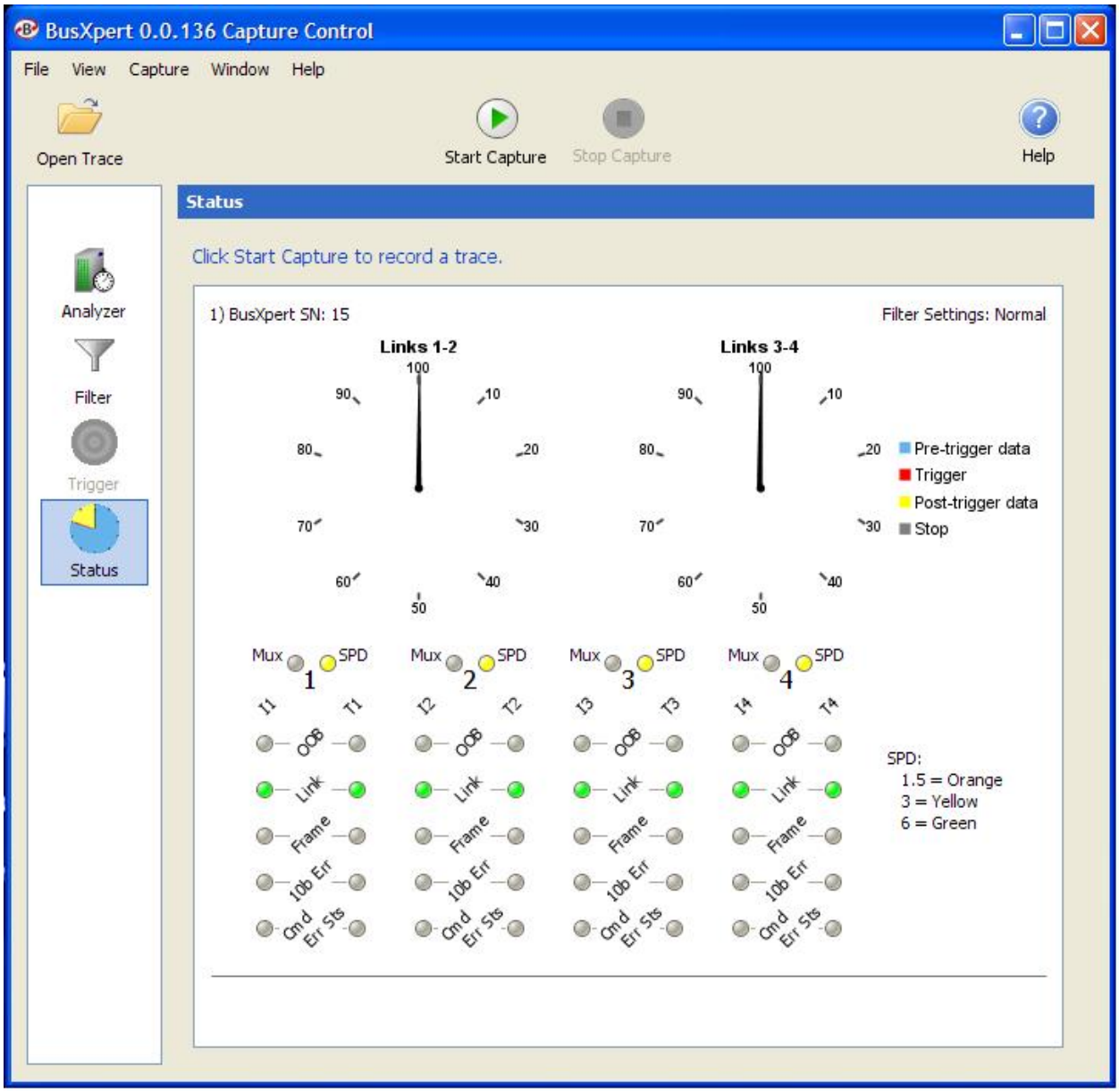
Pre-filters are for ‘excluding’ items from the trace file. Soon, there will be pre-filtering by SAS addresses too.



Triggering is one of the most important features on any analyzer. The BusXpert has made it both easy and powerful in this feature rich drag 'n drop environment. You can have upto 32 or conditions in any 'state' and up to 16 'and' conditions within any single sequencer. There are 8 timers and individual counters for each event as well as full branching and looping within the sequencers. There are upto 4 sequencers per/4 ports (8 sequencers for muxed traffic) making the BusXpert the most innovative triggering analyzer in the marketplace. Individual items can be edited and saved (dragged into) the User Terms area for reuse and full trigger sequencers can be saved for sharing and reuse.

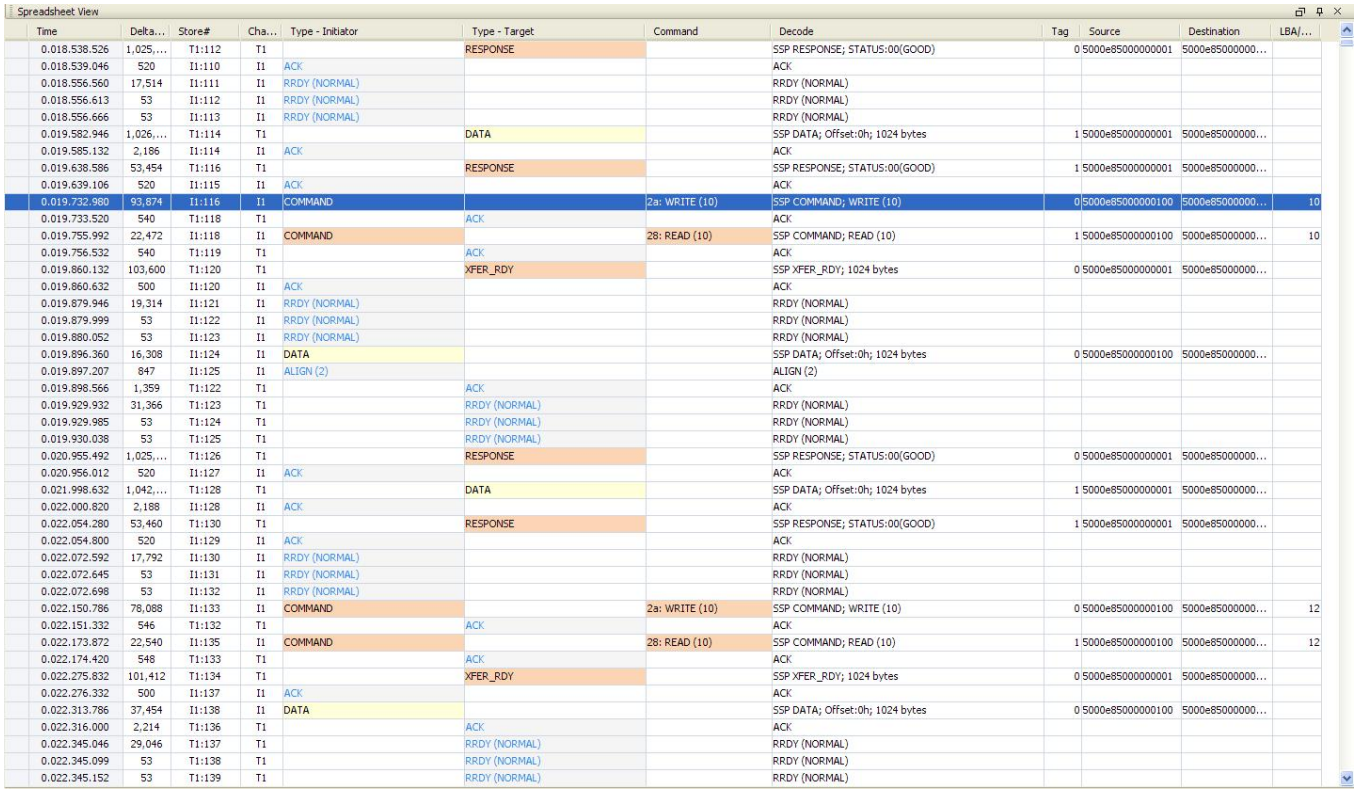


The Status displays any time the analyzer is ‘armed’ and running. It not only shows the circular buffer usage, it shows the LED lights from the front of the analyzer in ‘real-time’ and will show where the triggering logic is within the triggering sequencer.



The BusXpert Viewer Software: Where the innovation just keeps on getting better! This is the protocol view and the 'lowest' level of data view for the BusXpert. Any frame with multiple dwords in it will be automatically 'rolled up' so that it doesn't take up many lines/pages of view space, but simply put the mouse over that event and you can easily expand the entire frame into separate dwords and be able to go previous or next with a simple click. Simple side-by-side I/T display complete with X and O markers, unlimited long bookmarks and time stamp manipulation.

The Spreadsheet view is a line-by-line interleaved display for easily seeing flow between any initiator(s) or target(s) including expander traffic and primitive flow. All columns are re-sizeable, hide-able, move-able and user name-able. These views are completely 'synchronize-able' in time order by a simple 'double-click'.


Spreadsheet View

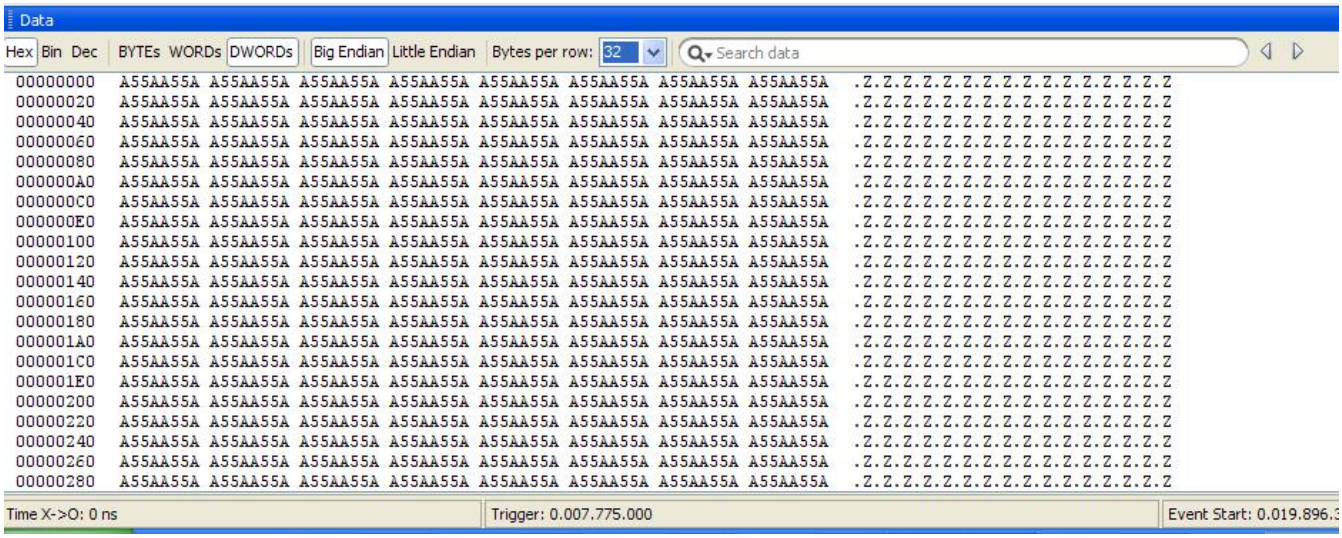
Time	Delta...	Store#	Cha...	Type - Initiator	Type - Target	Command	Decode	Tag	Source	Destination	LBA/...
0.018.538.526	1,025,...	T1:112	T1		RESPONSE		SSP RESPONSE; STATUS:00(GOOD)	0	5000e85000000001	5000e85000000...	
0.018.539.046	520	I1:110	I1	ACK			ACK				
0.018.556.560	17,514	I1:111	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.018.556.613	53	I1:112	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.018.556.666	53	I1:113	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.019.582.946	1,026,...	T1:114	T1		DATA		SSP DATA; Offset:0h; 1024 bytes	1	5000e85000000001	5000e85000000...	
0.019.585.132	2,186	I1:114	I1	ACK			ACK				
0.019.638.586	53,454	T1:116	T1		RESPONSE		SSP RESPONSE; STATUS:00(GOOD)	1	5000e85000000001	5000e85000000...	
0.019.639.106	520	I1:115	I1	ACK			ACK				
0.019.732.980	93,874	I1:116	I1	COMMAND		2a: WRITE (10)	SSP COMMAND; WRITE (10)	0	5000e85000000100	5000e85000000...	10
0.019.733.520	540	T1:118	T1		ACK		ACK				
0.019.755.992	22,472	I1:118	I1	COMMAND		28: READ (10)	SSP COMMAND; READ (10)	1	5000e85000000100	5000e85000000...	10
0.019.756.532	540	T1:119	T1		ACK		ACK				
0.019.860.132	103,600	T1:120	T1		XFER_RDY		SSP XFER_RDY; 1024 bytes	0	5000e85000000001	5000e85000000...	
0.019.860.632	500	I1:120	I1	ACK			ACK				
0.019.879.946	19,314	I1:121	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.019.879.999	53	I1:122	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.019.880.052	53	I1:123	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.019.896.360	16,308	I1:124	I1	DATA			SSP DATA; Offset:0h; 1024 bytes	0	5000e85000000100	5000e85000000...	
0.019.897.207	847	I1:125	I1	ALIGN (2)			ALIGN (2)				
0.019.898.566	1,359	T1:122	T1		ACK		ACK				
0.019.929.932	31,366	T1:123	T1		RRDY (NORMAL)		RRDY (NORMAL)				
0.019.929.985	53	T1:124	T1		RRDY (NORMAL)		RRDY (NORMAL)				
0.019.930.038	53	T1:125	T1		RRDY (NORMAL)		RRDY (NORMAL)				
0.020.955.492	1,025,...	T1:126	T1		RESPONSE		SSP RESPONSE; STATUS:00(GOOD)	0	5000e85000000001	5000e85000000...	
0.020.956.012	520	I1:127	I1	ACK			ACK				
0.021.998.632	1,042,...	T1:128	T1		DATA		SSP DATA; Offset:0h; 1024 bytes	1	5000e85000000001	5000e85000000...	
0.022.000.820	2,188	I1:128	I1	ACK			ACK				
0.022.054.280	53,460	T1:130	T1		RESPONSE		SSP RESPONSE; STATUS:00(GOOD)	1	5000e85000000001	5000e85000000...	
0.022.054.800	520	I1:129	I1	ACK			ACK				
0.022.072.592	17,792	I1:130	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.022.072.645	53	I1:131	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.022.072.698	53	I1:132	I1	RRDY (NORMAL)			RRDY (NORMAL)				
0.022.150.786	78,088	I1:133	I1	COMMAND		2a: WRITE (10)	SSP COMMAND; WRITE (10)	0	5000e85000000100	5000e85000000...	12
0.022.151.332	546	T1:132	T1		ACK		ACK				
0.022.173.872	22,540	I1:135	I1	COMMAND		28: READ (10)	SSP COMMAND; READ (10)	1	5000e85000000100	5000e85000000...	12
0.022.174.420	548	T1:133	T1		ACK		ACK				
0.022.275.832	101,412	T1:134	T1		XFER_RDY		SSP XFER_RDY; 1024 bytes	0	5000e85000000001	5000e85000000...	
0.022.276.332	500	I1:137	I1	ACK			ACK				
0.022.313.786	37,454	I1:138	I1	DATA			SSP DATA; Offset:0h; 1024 bytes	0	5000e85000000100	5000e85000000...	
0.022.316.000	2,214	T1:136	T1		ACK		ACK				
0.022.345.046	29,046	T1:137	T1		RRDY (NORMAL)		RRDY (NORMAL)				
0.022.345.099	53	T1:138	T1		RRDY (NORMAL)		RRDY (NORMAL)				
0.022.345.152	53	T1:139	T1		RRDY (NORMAL)		RRDY (NORMAL)				

The Transaction view was done in order to simply and efficiently show the different transaction levels of all commands found throughout the trace and their individual duration/completion times. The top level event is in 'time order' but then anything in the 'tree control' that's 'grouped' together can be out of order due to command tag queuing. However, this view makes it very simple to see incomplete and 'bad' commands. All columns are change-able, re-sizeable and hide-able too.

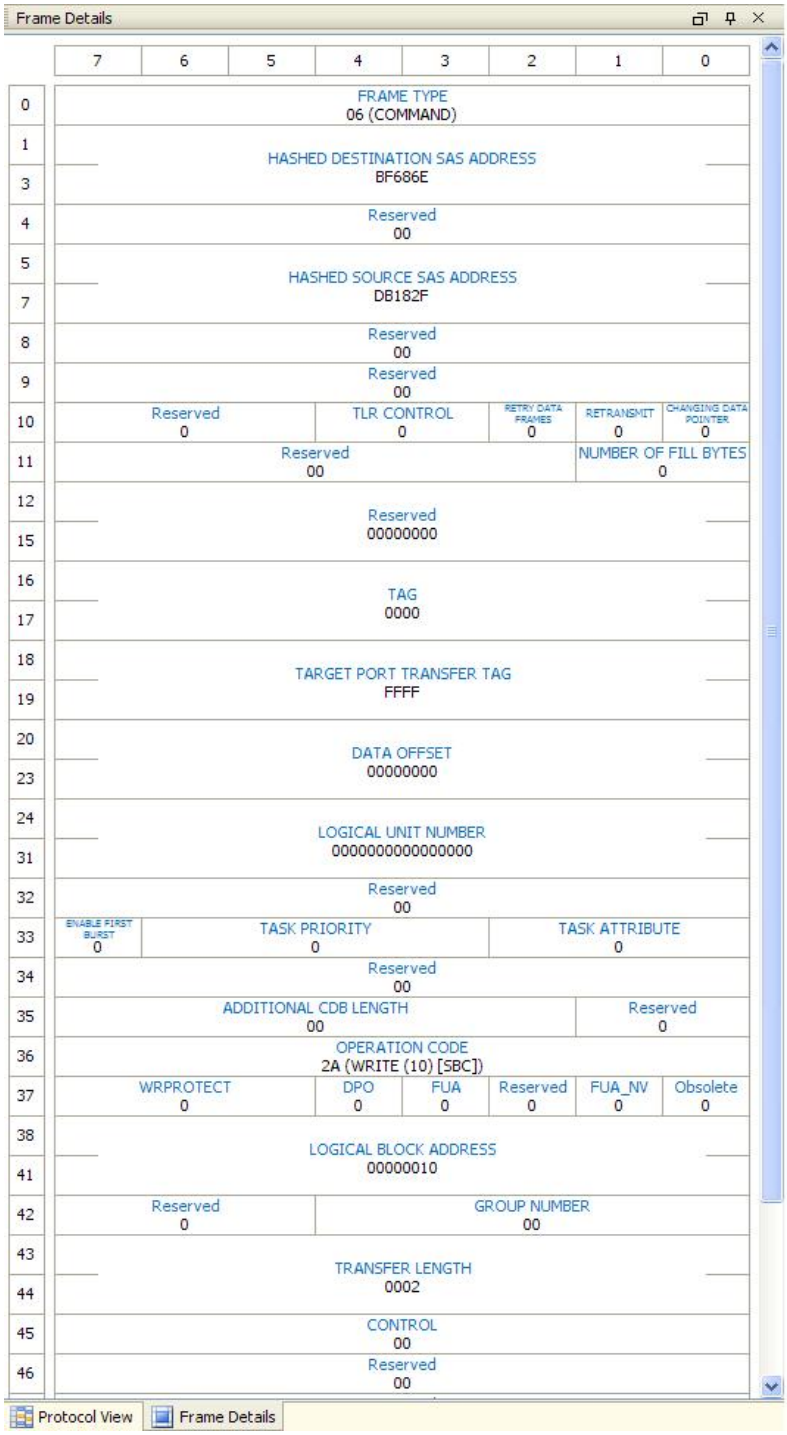
Transaction View

Time	Store#	Channel	Command	Tag	LBA	Status	Transfer Size	Duration
0.007.667.100	I1:49	[I1, T1]	⊞ READ (10)	0001	000000000006	GOOD	1,024	0.002.295.306
0.010.052.452	I1:60	[I1, T1]	⊞ WRITE (10)	0000	000000000008	GOOD	1,024	0.001.219.186
0.010.075.466	I1:62	[I1, T1]	⊞ READ (10)	0001	000000000008	GOOD	1,024	0.002.293.892
0.012.468.646	I1:73	[I1, T1]	⊞ WRITE (10)	0000	00000000000A	GOOD	1,024	0.001.223.280
0.012.491.732	I1:75	[I1, T1]	⊞ READ (10)	0001	00000000000A	GOOD	1,024	0.002.298.540
0.014.888.552	I1:90	[I1, T1]	⊞ WRITE (10)	0000	00000000000C	GOOD	1,024	0.001.219.826
0.014.911.566	I1:92	[I1, T1]	⊟ READ (10)	0001	00000000000C	GOOD	1,024	0.002.295.826
0.014.911.566	I1:92	I1	COMMAND; READ (10)					
0.017.151.226	T1:100	T1	DATA; Offset:0h; 1024 bytes					
0.017.206.866	T1:102	T1	RESPONSE; STATUS:00(GOOD)					
0.017.304.752	I1:103	[I1, T1]	⊞ WRITE (10)	0000	00000000000E	GOOD	1,024	0.001.234.300
0.017.327.840	I1:105	[I1, T1]	⊞ READ (10)	0001	00000000000E	GOOD	1,024	0.002.311.272
0.019.732.980	I1:116	[I1, T1]	⊟ WRITE (10)	0000	000000000010	GOOD	1,024	0.001.223.038
0.019.732.980	I1:116	I1	COMMAND; WRITE (10)					
0.019.860.132	T1:120	T1	XFER_RDY; 1024 bytes					
0.019.896.360	I1:124	I1	DATA; Offset:0h; 1024 bytes					
0.020.955.492	T1:126	T1	RESPONSE; STATUS:00(GOOD)					
0.019.755.992	I1:118	[I1, T1]	⊞ READ (10)	0001	000000000010	GOOD	1,024	0.002.298.814
0.022.150.786	I1:133	[I1, T1]	⊞ WRITE (10)	0000	000000000012	GOOD	1,024	0.001.220.212
0.022.173.872	I1:135	[I1, T1]	⊞ READ (10)	0001	000000000012	GOOD	1,024	0.002.295.540
0.024.569.086	I1:146	[I1, T1]	⊞ WRITE (10)	0000	000000000014	GOOD	1,024	0.001.223.120
0.024.592.100	I1:148	[I1, T1]	⊞ READ (10)	0001	000000000014	GOOD	1,024	0.002.298.852
0.026.985.280	I1:159	[I1, T1]	⊞ WRITE (10)	0000	000000000016	GOOD	1,024	0.001.221.932
0.027.008.366	I1:161	[I1, T1]	⊞ READ (10)	0001	000000000016	GOOD	1,024	0.002.297.620
0.029.405.186	I1:175	[I1, T1]	⊞ WRITE (10)	0000	000000000018	GOOD	1,024	0.001.223.366
0.029.428.200	I1:177	[I1, T1]	⊞ READ (10)	0001	000000000018	GOOD	1,024	0.002.298.692
0.031.821.386	I1:188	[I1, T1]	⊞ WRITE (10)	0000	00000000001A	GOOD	1,024	0.001.220.986
0.031.844.472	I1:190	[I1, T1]	⊞ READ (10)	0001	00000000001A	GOOD	1,024	0.002.296.666
0.034.240.466	I1:201	[I1, T1]	⊞ WRITE (10)	0000	00000000001C	GOOD	1,024	0.001.223.646
0.034.263.486	I1:203	[I1, T1]	⊞ READ (10)	0001	00000000001C	GOOD	1,024	0.002.299.646
0.036.659.786	I1:217	[I1, T1]	⊞ WRITE (10)	0000	00000000001E	GOOD	1,024	0.001.219.900
0.036.682.880	I1:219	[I1, T1]	⊞ READ (10)	0001	00000000001E	GOOD	1,024	0.002.296.866
0.039.069.720	I1:230	[I1, T1]	⊞ WRITE (10)	0000	000000000020	GOOD	1,024	0.001.220.272
0.039.092.740	I1:232	[I1, T1]	⊞ READ (10)	0001	000000000020	GOOD	1,024	0.002.296.032
0.041.487.426	I1:243	[I1, T1]	⊞ WRITE (10)	0000	000000000022	GOOD	1,024	0.001.232.646
0.041.510.520	I1:245	[I1, T1]	⊞ READ (10)	0001	000000000022	GOOD	1,024	0.002.307.966
0.043.918.772	I1:259	[I1, T1]	⊞ WRITE (10)	0000	000000000024	GOOD	1,024	0.001.222.500
0.043.941.792	I1:261	[I1, T1]	⊞ READ (10)	0001	000000000024	GOOD	1,024	0.002.297.746
0.046.336.486	I1:272	[I1, T1]	⊞ WRITE (10)	0000	000000000026	GOOD	1,024	0.001.234.406
0.046.359.580	I1:274	[I1, T1]	⊞ READ (10)	0001	000000000026	GOOD	1,024	0.002.309.458
0.048.766.220	I1:285	[I1, T1]	⊞ WRITE (10)	0000	000000000028	GOOD	1,024	0.001.233.818
0.048.789.240	I1:287	[I1, T1]	⊞ READ (10)	0001	000000000028	GOOD	1,024	0.002.308.518

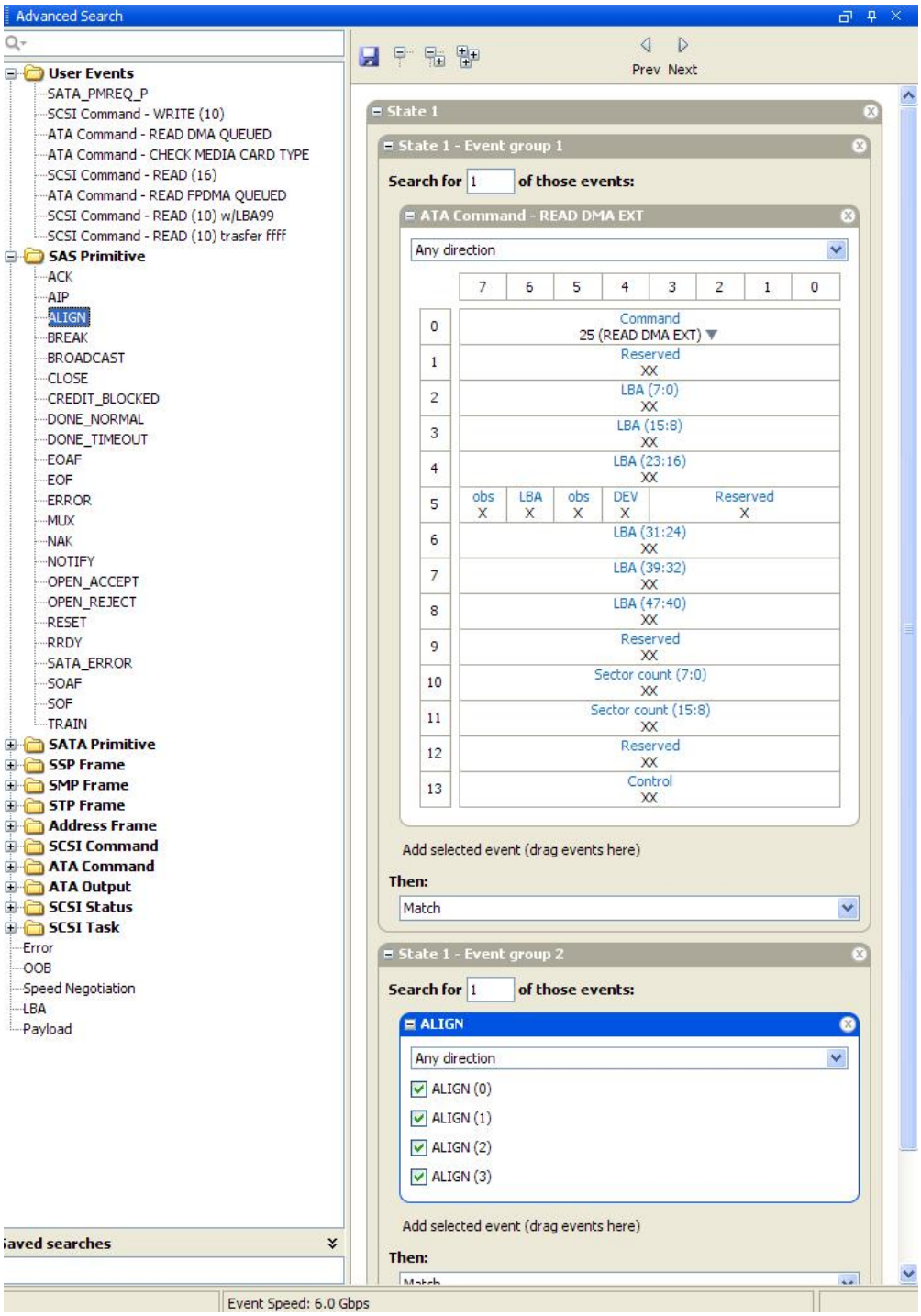
The Data View is for easily and quickly viewing, formatting and searching any payload data. This view is automatically 'updated' as the user go over any data frame within the trace. You can easily change data format, byte order and search through any and all the data.



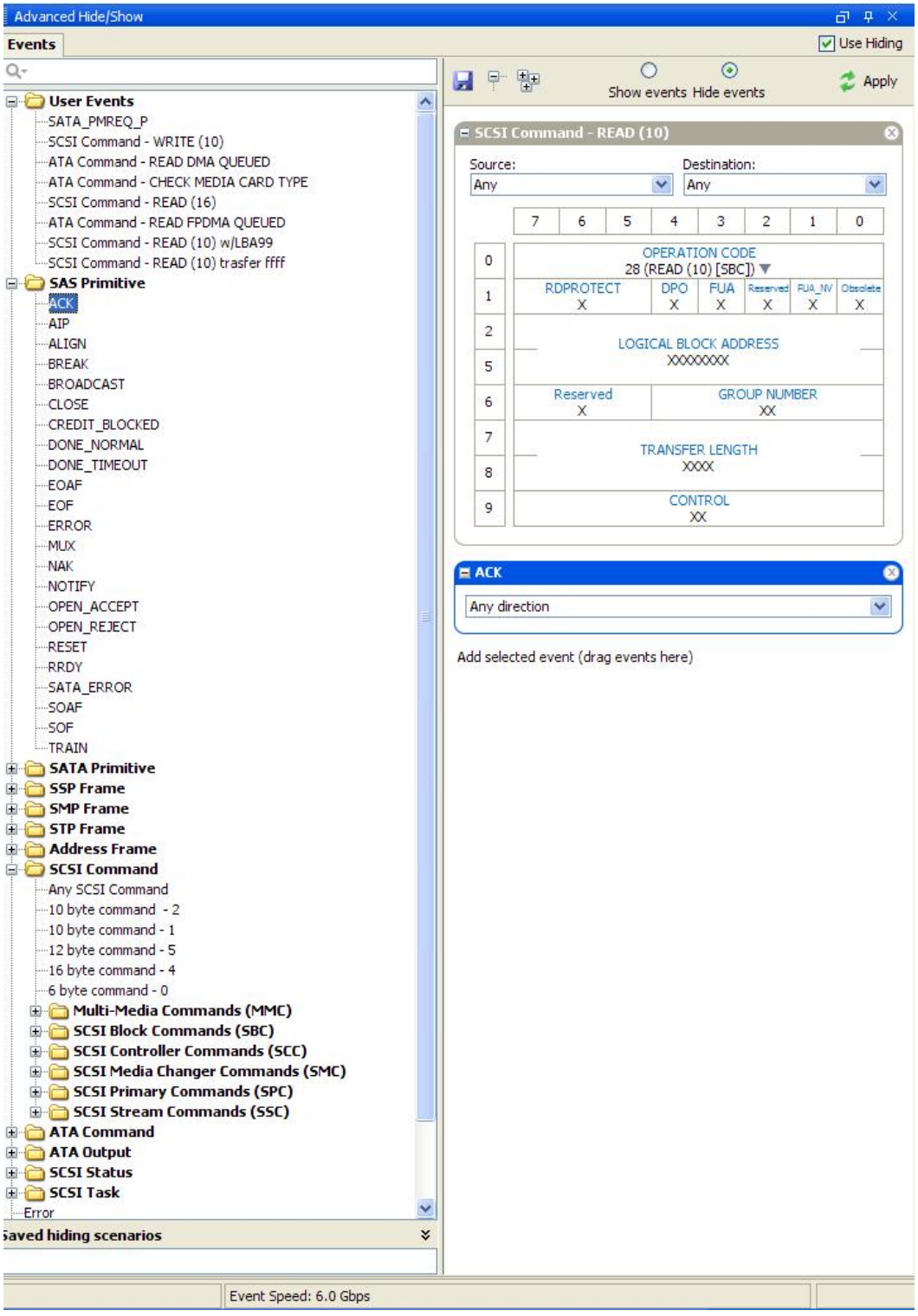
Then there's the Frame Details View. This view has won the hearts and minds of all engineers that see/use it. It simply decodes/displays all frame data identically as the specification shows it. No more having to refer to the specification document in order to remember which bits and bytes mean what within any frame or command. This view is dynamically updated as you pass over these items in any of the different views of the BusXpert's interface.



Searching can be as simple as typing in a single event, command or primitive that you want to look for and saying ‘find’, however, it can be as complex as the most diverse triggering setup in order to find exactly what you are looking for. Thus, the BusXpert’s Advanced Search was implemented. Easy-to-use drag ‘n drop technology for building up complex levels of searching.



Lastly, but certainly not least, is the Advanced Filtering. While there are several 'fast' filters for the everyday/trace filtering there are those times when you really need to do multiple commands, event and primitives to filter these large traces down into meaningful data. That's where the BusXpert's Advanced Filter (show/hide) shines.



All views can be place on the screen anywhere the user wishes in nearly any configuration possible. Simply grab the window you want and drag it to where you want it displayed. The software is smart enough to remember your last settings and keep the view that 'you' have chosen.