



Section 2 RT_View

2.1 Overview of the RT_View program

This document introduces the **REF TEK** RT_View, an application designed to allow viewing of **REF TEK** data. **REF TEK**/PASSCAL data files are binary in nature. The data is grouped in 1024 byte packets. There are a number of different packet types. Some packets (i.e. State-of-Health) are mostly plain text. Other packets (like data) are mostly binary.

The RT_View program decodes packets and presents them in readable form. For more information on actual internal packet structure see the **REF TEK** Recording Format document. RT_View scans the data file and presents a table of contents of packet types found. The contents list serves as a jump point to decoded packet information.

With a decoded packet displayed, the user has options available to move through the file displaying packets of the same type. Displaying the packets in its raw binary state is available. Event data and packets can be displayed in graphs as well.



Note: At the present time RT_View runs only on the windows platform. Windows 95 or above is required.

2.2 Sensor Sensitivity Relationship

RT_view can display event data in one of three measurements: 1) counts, 2) volts and 3) G's (acceleration of gravity). The counts format is the raw numerical data from the A/D chips. Volts format is the counts data multiplied by the specific volts per count value for a data channel. The G's format is the volts data divided by the specific volts per G value for a data channel. The user can change the current display format from the "Options" menu item. The user can tell the current selection from the Y axis data labels. Values will end in "V" for volts and "G" for G's

When displaying a graph, the status line at the bottom of the display shows the current mouse pointer position. The values are channel number, X axis actual time, X axis relative time (from event start) and Y axis value in the current selected display format (counts, volts, G's).

Using RT_View the user can select a portion of an event for examination. By changing the X axis scales the user can zoom in on a particular point of time. Channels can also be selected/deselected to include/remove them from the display. The user can then (by using the mouse and status line) read values from the graph by positioning the cursor. Again the status line values are in the current data display format.

2.3 Data Conversion Information

RT_View uses conversion information stored in the header packet of all event files. Conversion information is specific to each data channel.

Conversion information consists of:

- A/D volts per count
- A/D number of bits
- A/D full scale volts
- Sensor full scale volts
- Sensor measurement units
- Sensor volts per measurement unit

If sensor information is not present in the header packet, RT_View will use 2.4 Volts/G as a default value.

There are several sources for the conversion information. The A/D volts per count is measured at REFTEK and stored in each A/D board when built. The A/D number of bits is stored in each A/D board when built. The A/D full scale volts is dependent on A/D board options and is stored in each A/D board when built.

The sensor values are supplied by the sensor manufacturer. For SM units with internal sensors the data is programmed into a serial EPROM that the RefTek 130 reads on boot. For the MC-12 and MC-18 units the user will have to enter the manufacturers data at installation time. See the MC-12/18 User manual for information entry details.

2.4 To execute the RT_View program

To run the RT_View program:

1. Copy the **RT_View.exe** program from the CD win32 directory to the **C:\vreftek** directory and execute.
2. When first executed an **RT_View.ini** file is created and saved in the same directory as the .exe program.

RT_View.ini file stores settings:

- This file contains options and settings that are stored in the file when the user changes options.
- When the user creates options on the **Options** menu they can be saved to the **RT_View.ini** file with the **SaveOptions** menu command located on the **Options** menu.
- The display size and location of the main window is saved in the **RT_View.ini** file.

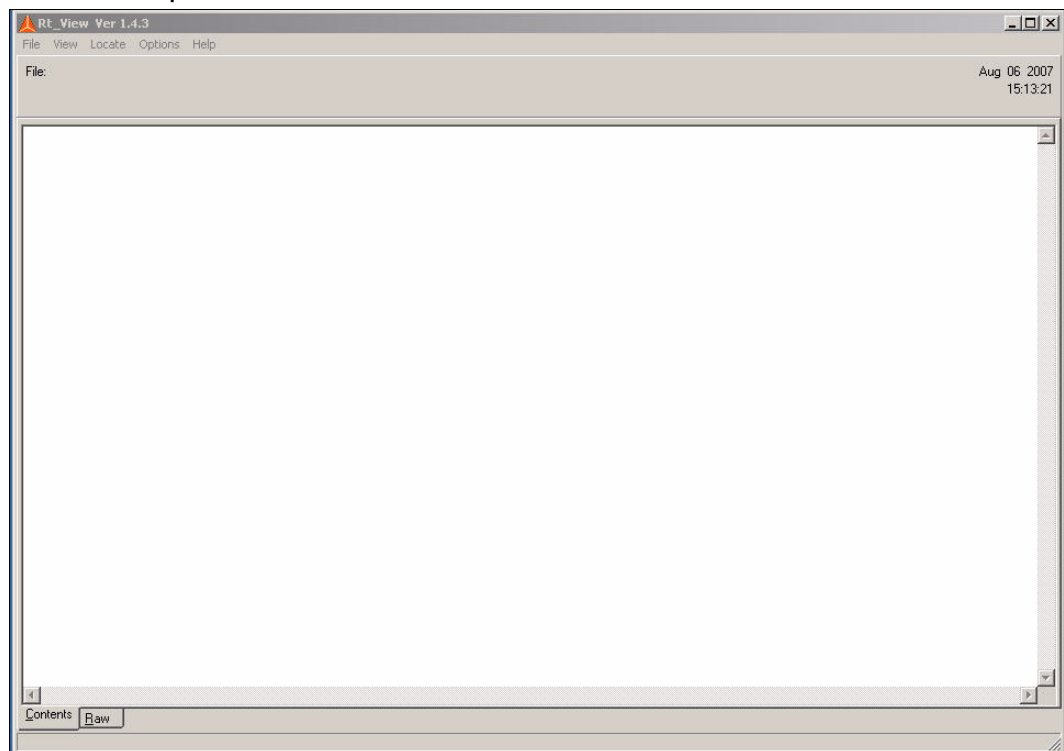
2.5 Viewing a file

The following screens show **RT_View** and explain what each screen is used for by using example steps to open a file.

There are 3 ways to open files:

- Drag and Drop files on an **RT_View** shortcut or executable.
- Drag and Drop files onto a running **RT_View** application.
- Use the **File** and **Open** menu from the drop-down menu after opening the **RT_View** program.

1. Start the **RT_View** application and the following display will open.



2. Use the **File** > **Open** drop-down menu to open and view a file contents.

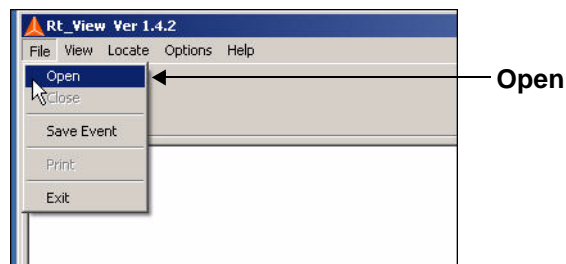


Figure 2 - 1 RT_View main application window

3. The file manager window opens to allow browsing for a file
4. Select a file to view.

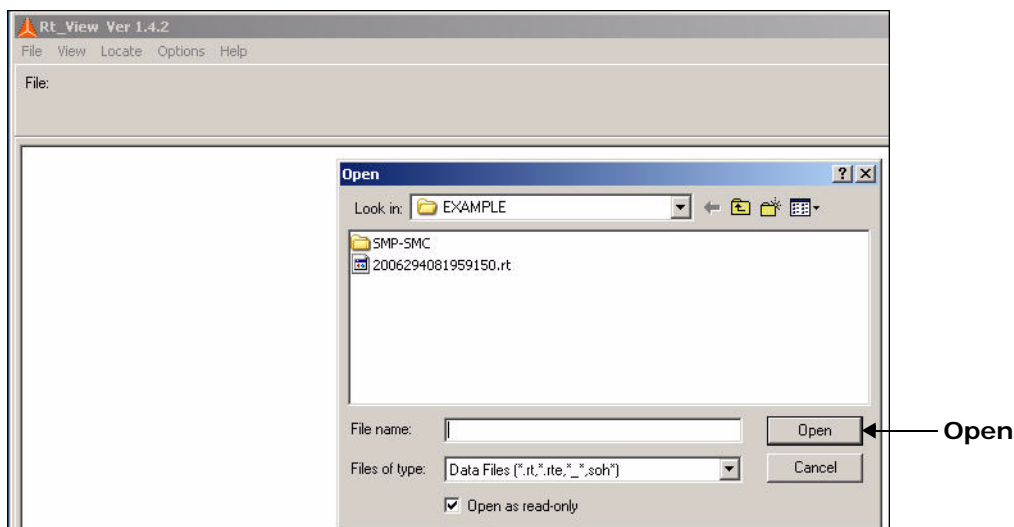


Figure 2 - 2 Open file manager

5. Depending on the options selected in the **Options** menu, (shown below) the file selected will open and display either:
 - **Graph of the first event data**
 - **Table of Contents**
6. By default data is graphed because these two options (shown below on the **Options** menu) are selected.

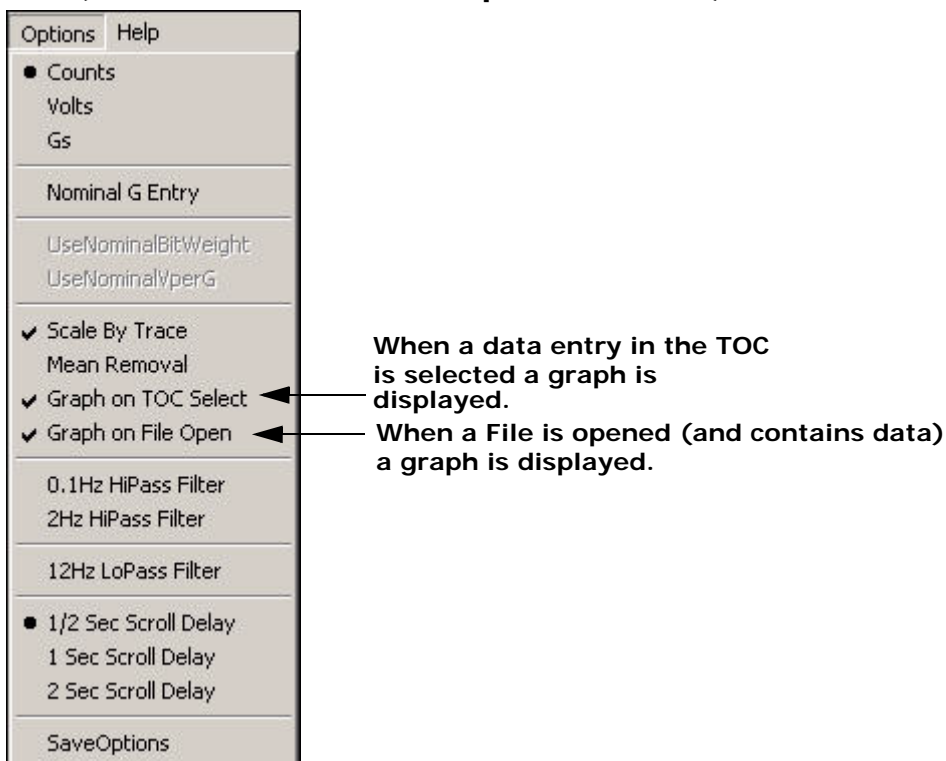


Figure 2 - 3 Options menu

7. If there is no event data, the viewer will open showing the table of contents of the event file as shown in Figure 2 - 4.

-OR-

Contents of a State-Of-Health file (Figure 2 - 5).

File: 2006294081959150.rt

Aug 10 2007 14:30:23

Packet	Description	Unit	Time	Event	Stream	Channel	SPS	Type
1	Event Header Data	9AD4	2006 294:08:20:00.000	211	1		200.0	C0
2	Event Data	9AD4	2006 294:08:20:00.000	211	1	2		
3	Event Data	9AD4	2006 294:08:20:00.000	211	1	3		
4	Event Data	9AD4	2006 294:08:20:00.000	211	1	1		
264	Event Trailer Data	9AD4	2006 294:08:20:00.000	211	1		200.0	C0
265	Event Header Data	9BD0	2006 294:08:20:00.000	137	1		200.0	C0
266	Event Data	9BD0	2006 294:08:20:00.000	137	1	3		
267	Event Data	9BD0	2006 294:08:20:00.000	137	1	4		
268	Event Data	9BD0	2006 294:08:20:00.000	137	1	5		
269	Event Data	9BD0	2006 294:08:20:00.000	137	1	6		
270	Event Data	9BD0	2006 294:08:20:00.000	137	1	2		
271	Event Data	9BD0	2006 294:08:20:00.000	137	1	1		
877	Event Trailer Data	9BD0	2006 294:08:20:00.000	137	1		200.0	C0
878	Event Header Data	9BD3	2006 294:08:20:00.000	164	1		200.0	C0
879	Event Data	9BD3	2006 294:08:20:00.000	164	1	2		
880	Event Data	9BD3	2006 294:08:20:00.000	164	1	3		
881	Event Data	9BD3	2006 294:08:20:00.000	164	1	1		
1264	Event Trailer Data	9BD3	2006 294:08:20:00.000	164	1		200.0	C0
1265	Event Header Data	9BE6	2006 294:08:20:00.000	169	1		200.0	C0
1266	Event Data	9BE6	2006 294:08:20:00.000	169	1	3		
1267	Event Data	9BE6	2006 294:08:20:00.000	169	1	1		
1268	Event Data	9BE6	2006 294:08:20:00.000	169	1	2		
1489	Event Trailer Data	9BE6	2006 294:08:20:00.000	169	1		200.0	C0
1490	Event Header Data	9D89	2006 294:08:20:00.000	360	1		200.0	C0
1491	Event Data	9D89	2006 294:08:20:00.000	360	1	3		
1492	Event Data	9D89	2006 294:08:20:00.000	360	1	1		
1493	Event Data	9D89	2006 294:08:20:00.000	360	1	2		
1715	Event Trailer Data	9D89	2006 294:08:20:00.000	360	1		200.0	C0

Contents Raw

Raw data

Contents

Figure 2 - 4 Table of Contents - File view

File: SOH.RT

Aug 10 2007 14:50:15

Packet	Description	Unit	Time	Event	Stream	Channel	SPS	Type
1	State Of Health Info	949F	2007 007:15:38:53.000					
6	Station-Channel Info	949F	2007 007:15:56:02.000					
8	Operating Mode Params	949F	2007 007:15:56:02.000					
9	Data Stream Params	949F	2007 007:15:56:02.000					
10	Aux Parameters	949F	2007 007:15:56:02.000					
11	Cal Parameters	949F	2007 007:15:56:02.000					
12	Filter Description	949F	2007 007:15:56:02.000					
18	State Of Health Info	949F	2007 007:15:56:02.000					
19	Station-Channel Info	949F	2007 007:15:56:02.000					
21	Operating Mode Params	949F	2007 007:15:56:02.000					
22	Data Stream Params	949F	2007 007:15:56:02.000					
23	Aux Parameters	949F	2007 007:15:56:02.000					
24	Cal Parameters	949F	2007 007:15:56:02.000					
25	Filter Description	949F	2007 007:15:56:02.000					
31	State Of Health Info	949F	2007 007:15:56:02.000					
71	State Of Health Info	949F	2007 007:23:01:10.000					
	[end of file]							

Contents Raw

Raw data

Contents

Figure 2 - 5 SOH file

Menu Options:

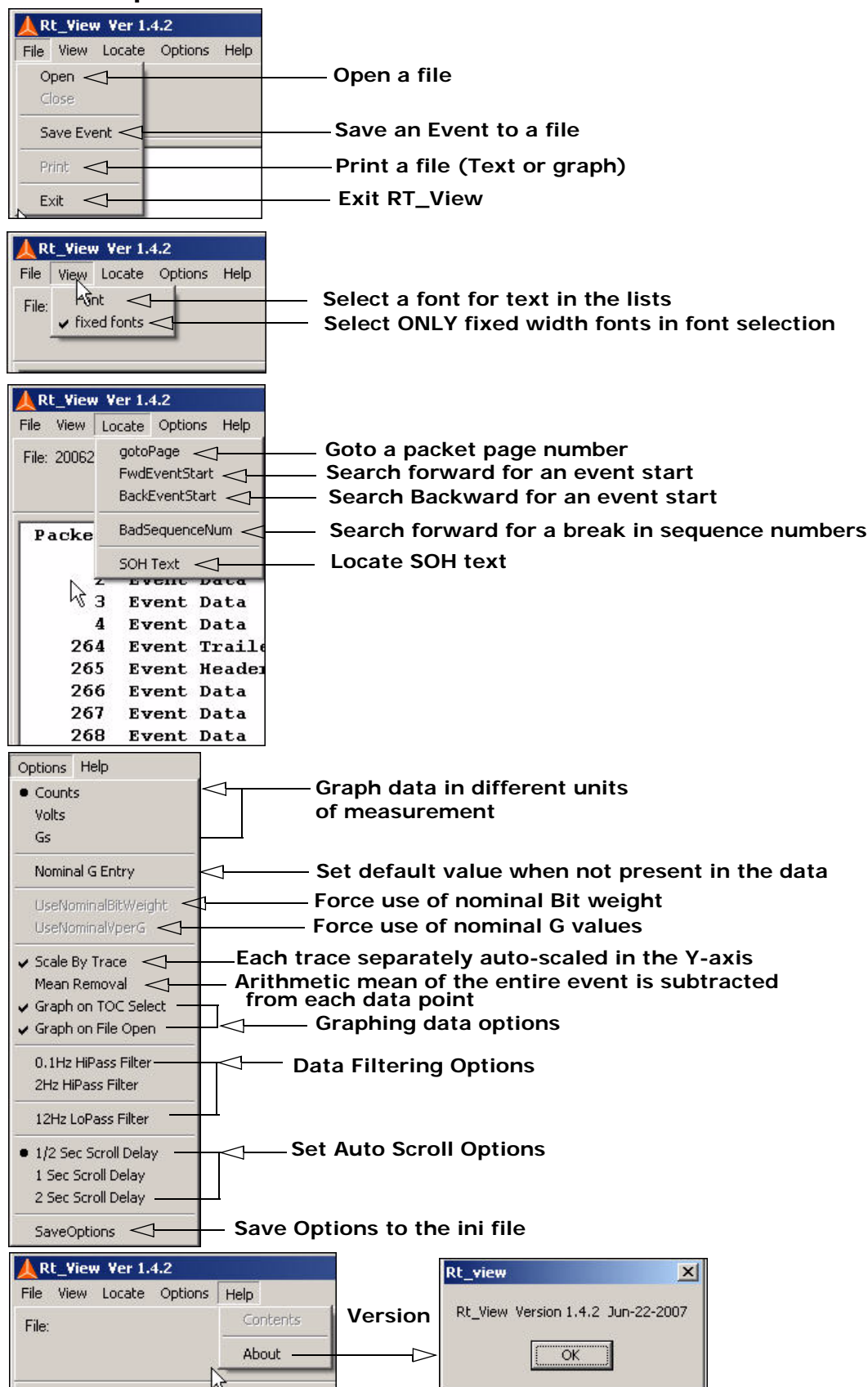


Figure 2 - 6 Menu Options

2.6 Viewing Event Header Data

To view Event Header Data:

1. Double-click the **Event Header Data** entry in the table of contents. This allows viewing of the header part of the file.

RT View Ver 1.4.3
File View Locate Options Help
File: 2006294081959150.rt Aug 10 2007 14:30:23

Packet	Description	Unit	Time	Event	Stream	Channel	SPS	Type
1	Event Header Data	9AD4	2006 294:08:20:00.000	211	1		200.0	C0
2	Event Data	9AD4	2006 294:08:20:00.000	211	1	2		
3	Event Data	9AD4	2006 294:08:20:00.000	211	1	3		
4	Event Data	9AD4	2006 294:08:20:00.000	211	1	1		
264	Event Trailer Data	9AD4	2006 294:08:20:00.000	211	1		200.0	C0
265	Event Header Data	9BD0	2006 294:08:20:00.000	137	1		200.0	C0
266	Event Data	9BD0	2006 294:08:20:00.000	137	1	3		
267	Event Data	9BD0	2006 294:08:20:00.000	137	1	4		
268	Event Data	9BD0	2006 294:08:20:00.000	137	1	5		
269	Event Data	9BD0	2006 294:08:20:00.000	137	1	6		
270	Event Data	9BD0	2006 294:08:20:00.000	137	1	2		
271	Event Data	9BD0	2006 294:08:20:00.000	137	1	1		
877	Event Trailer Data	9BD0	2006 294:08:20:00.000	137	1		200.0	C0
878	Event Header Data	9BD3	2006 294:08:20:00.000	164	1		200.0	C0
879	Event Data	9BD3	2006 294:08:20:00.000	164	1	2		
880	Event Data	9BD3	2006 294:08:20:00.000	164	1	3		
881	Event Data	9BD3	2006 294:08:20:00.000	164	1	1		
1264	Event Trailer Data	9BD3	2006 294:08:20:00.000	164	1		200.0	C0
1265	Event Header Data	9BE6	2006 294:08:20:00.000	169	1		200.0	C0
1266	Event Data	9BE6	2006 294:08:20:00.000	169	1	3		
1267	Event Data	9BE6	2006 294:08:20:00.000	169	1	1		
1268	Event Data	9BE6	2006 294:08:20:00.000	169	1	2		
1489	Event Trailer Data	9BE6	2006 294:08:20:00.000	169	1		200.0	C0
1490	Event Header Data	9D89	2006 294:08:20:00.000	360	1		200.0	C0
1491	Event Data	9D89	2006 294:08:20:00.000	360	1	3		
1492	Event Data	9D89	2006 294:08:20:00.000	360	1	1		
1493	Event Data	9D89	2006 294:08:20:00.000	360	1	2		
1715	Event Trailer Data	9D89	2006 294:08:20:00.000	360	1		200.0	C0

Contents Raw

2. The **Header** display opens a view of the header page.

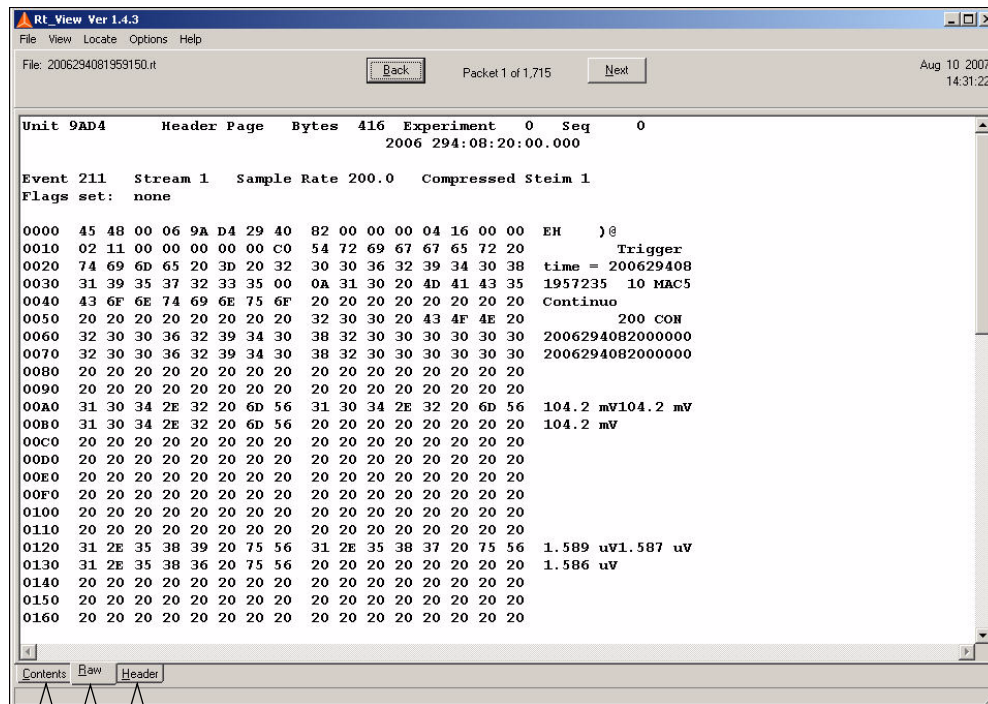
RT View Ver 1.4.3
File View Locate Options Help
File: 2006294081959150.rt Aug 10 2007 14:30:54
Back Packet 1 of 1,715 Next

Unit	Header Page	Bytes	Experiment	0	Seq	0
2006 294:08:20:00.000						
Station Name	MAC5					
Station Comment						
Total Installed Channels in Recorder	6					
Stream number	1					
Stream Name	Continuo					
Event	211					
Data Format	Compressed Steim 1					
Sample Rate	200.0 sps					
Time Source	Internal Timeclock					
Time Quality	Last PLL < 1 Day					
Trigger Type	CON					
Trigger Time	2006 294:08:20:00.000					
First Samp Time	2006 294:08:20:00.000					
Das	Station	Bit Weight				
Chan	Chan	Nominal	True	Gain	A/D	Channel
						FS Analog
						Chan
						Code
						Sensor
						FS Analog
						V/Unit
						Unit
1		104.2 mV	1.589 uV	x1	24 bit	+/- 10.0V
2		104.2 mV	1.587 uV	x1	24 bit	+/- 10.0V

Contents Raw Header

Figure 2 - 7 Header

- Clicking the tabs located at the bottom of the display allow a different view of the file header.



- Event Header - Raw



Note: The file classifications at the bottom of the display reveal the supported viewing formats of the data page.

2.7 Event Data Header/Trailer description

To view an Event Header or trailer:

1. Double-click the **Event Header Data** or **Event Trailer Data** entry in the table of contents. This allows viewing of the header part of the file.

Packet	Description	Unit	Time	Event	Stream	Channel
1	Event Header Data	91C8	2004 133:15:48:53.895			
2	Event Data	91C8	2004 133:15:48:53.895	3	1	1
3	Event Data	91C8	2004 133:15:48:53.895	3	1	2
4	Event Data	91C8	2004 133:15:48:53.895	3	1	3
32	Event Trailer Data	91C8	2004 133:15:48:53.895			

Figure 2 - 8 Table of contents

2. The **Header** display opens a view of the header page.

Unit	Header Page	Bytes	Experiment	Seq
91C8		416	10	0
2004 133:15:48:53.895				
Station Name	99999			
Station Comment	999991-LOAD TEST			
Stream number	1			
Stream Name	Triggered Stream			
Event	3			
Data Format	Compressed			
Sample Rate	200 sps			
Time Source				
Time Quality				
Trigger Type	CHD			
Trigger Time	2004 133:15:48:53.895			
First Samp Time	2004 133:15:48:53.895			
Chan 1 Nom Bit Weight	52.08 nV			
Chan 2 Nom Bit Weight	52.08 nV			
Chan 3 Nom Bit Weight	52.08 nV			
Chan 1 True Bit Weight	818.9 nV			
Chan 2 True Bit Weight	819.5 nV			
Chan 3 True Bit Weight	819.0 nV			
Chan 1 Gain	x1			
Chan 2 Gain	x1			
Chan 3 Gain	x1			

Figure 2 - 9 Top of header page

3. Use the scroll-bar to view the bottom page of the header.

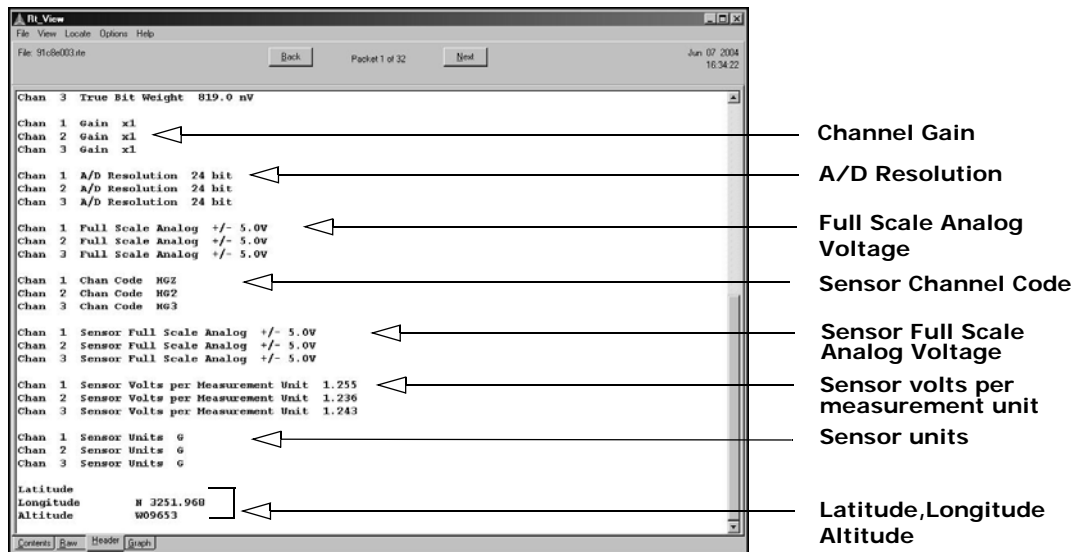


Figure 2 - 10 End of header page

2.8 Viewing Event Data

To view Event Data:

1. Double-click the Event Data entry in the table of contents. This allows viewing of the data.

Rt_View Ver 1.4.3
File View Locate Options Help
File: 2006294081959150.rt Aug 10 2007 14:30:23

Packet	Description	Unit	Time	Event	Stream	Channel	SPS	Type
1	Event Header Data	9AD4	2006 294:08:20:00.000	211	1		200.0	C0
2	Event Data	9AD4	2006 294:08:20:00.000	211	1	2		
3	Event Data	9AD4	2006 294:08:20:00.000	211	1	3		
4	Event Data	9AD4	2006 294:08:20:00.000	211	1	1		
264	Event Trailer Data	9AD4	2006 294:08:20:00.000	211	1		200.0	C0
265	Event Header Data	9BD0	2006 294:08:20:00.000	137	1		200.0	C0
266	Event Data	9BD0	2006 294:08:20:00.000	137	1	3		
267	Event Data	9BD0	2006 294:08:20:00.000	137	1	4		
268	Event Data	9BD0	2006 294:08:20:00.000	137	1	5		
269	Event Data	9BD0	2006 294:08:20:00.000	137	1	6		
270	Event Data	9BD0	2006 294:08:20:00.000	137	1	2		
271	Event Data	9BD0	2006 294:08:20:00.000	137	1	1		
877	Event Trailer Data	9BD0	2006 294:08:20:00.000	137	1		200.0	C0
878	Event Header Data	9BD3	2006 294:08:20:00.000	164	1		200.0	C0
879	Event Data	9BD3	2006 294:08:20:00.000	164	1	2		
880	Event Data	9BD3	2006 294:08:20:00.000	164	1	3		
881	Event Data	9BD3	2006 294:08:20:00.000	164	1	1		
1264	Event Trailer Data	9BD3	2006 294:08:20:00.000	164	1		200.0	C0
1265	Event Header Data	9BE6	2006 294:08:20:00.000	169	1		200.0	C0
1266	Event Data	9BE6	2006 294:08:20:00.000	169	1	3		
1267	Event Data	9BE6	2006 294:08:20:00.000	169	1	1		
1268	Event Data	9BE6	2006 294:08:20:00.000	169	1	2		
1489	Event Trailer Data	9BE6	2006 294:08:20:00.000	169	1		200.0	C0
1490	Event Header Data	9D89	2006 294:08:20:00.000	360	1		200.0	C0
1491	Event Data	9D89	2006 294:08:20:00.000	360	1	3		
1492	Event Data	9D89	2006 294:08:20:00.000	360	1	1		
1493	Event Data	9D89	2006 294:08:20:00.000	360	1	2		
1715	Event Trailer Data	9D89	2006 294:08:20:00.000	360	1		200.0	C0

Contents Raw

Figure 2 - 11 Event Data contents

2. Clicking the **Graph** button opens a time series graph of the Event data.

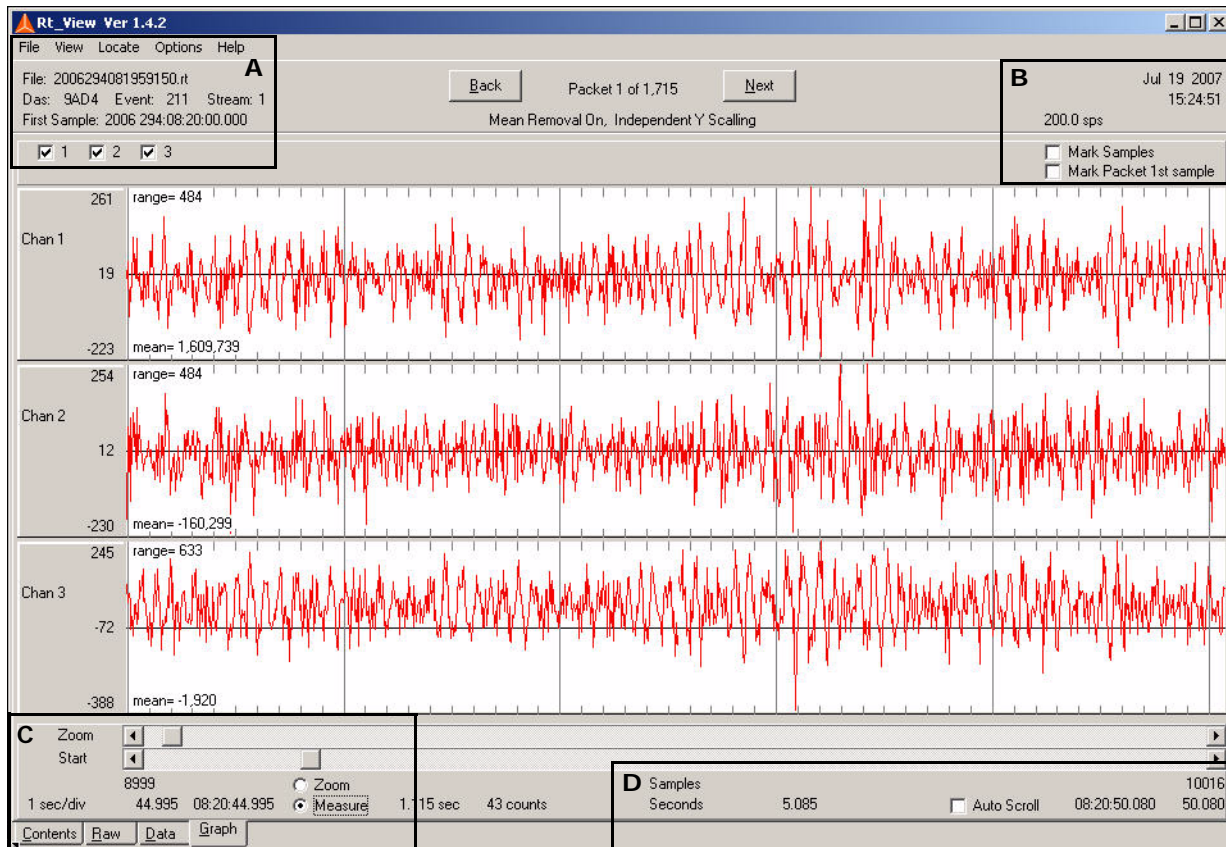


Figure 2 - 12 RT_View of the data

The following close-up views of the displays show how to use areas of the display.

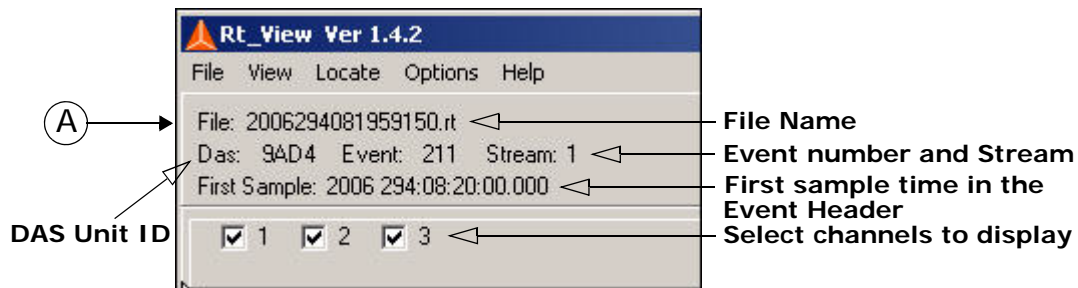


Figure 2 - 13 Section A - Upper-Left display

Figure 2 - 14 Pull-Down menu options

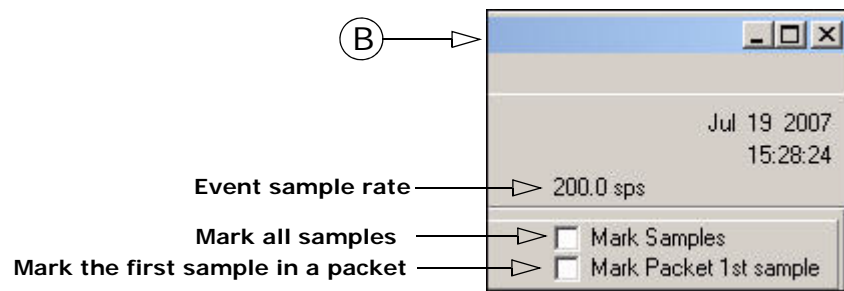


Figure 2 - 15 Section B - Upper-Right display

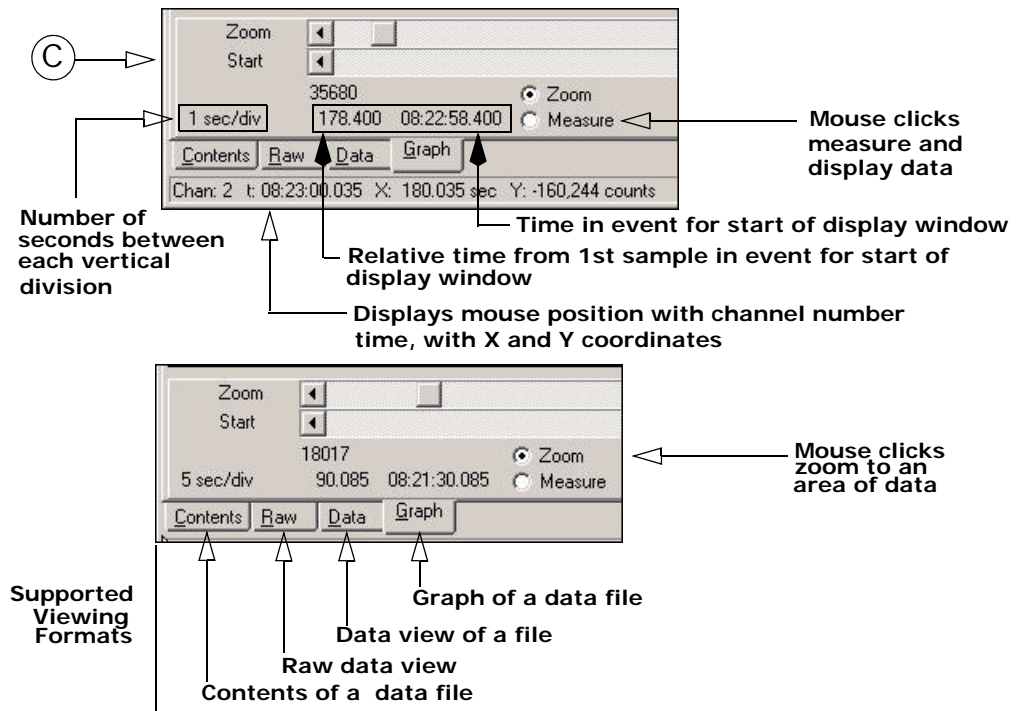


Figure 2 - 16 Section C - Lower-Left display

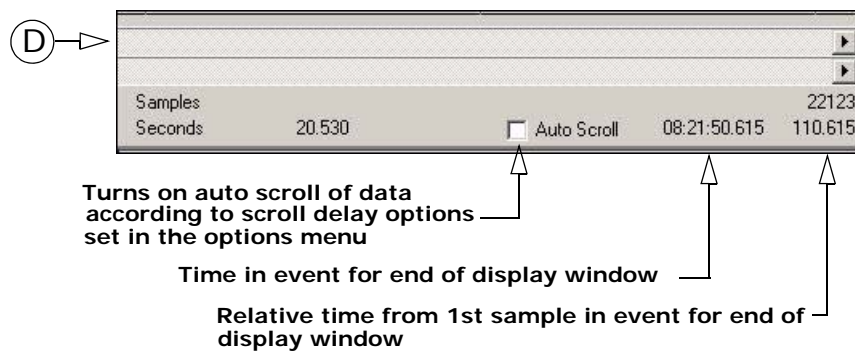


Figure 2 - 17 Section D - Lower-Right display

3. Click the **Data** button opens a view of sample data.

n	time	Data
1	08:20:00.000	-160329 -160254 -160293 -160254 -160303
6	08:20:00.025	-160305 -160317 -160306 -160295 -160310
11	08:20:00.050	-160196 -160354 -160374 -160227 -160277
16	08:20:00.075	-160220 -160335 -160357 -160232 -160281
21	08:20:00.100	-160276 -160317 -160333 -160288 -160283
26	08:20:00.125	-160317 -160278 -160274 -160321 -160268
31	08:20:00.150	-160375 -160365 -160346 -160344 -160202
36	08:20:00.175	-160284 -160223 -160226 -160338 -160273
41	08:20:00.200	-160312 -160285 -160277 -160271 -160277
46	08:20:00.225	-160300 -160264 -160311 -160350 -160418
51	08:20:00.250	-160354 -160294 -160288 -160247 -160302
56	08:20:00.275	-160282 -160277 -160306 -160285 -160268
61	08:20:00.300	-160331 -160312 -160225 -160324 -160292
66	08:20:00.325	-160241 -160298 -160274 -160265 -160208
71	08:20:00.350	-160277 -160412 -160382 -160229 -160316
76	08:20:00.375	-160404 -160267 -160442 -160284 -160119
81	08:20:00.400	-160385 -160291 -160272 -160277 -160223
86	08:20:00.425	-160306 -160275 -160264 -160273 -160417
91	08:20:00.450	-160303 -160142 -160314 -160219 -160328
96	08:20:00.475	-160379 -160237 -160375 -160269 -160350
101	08:20:00.500	-160450 -160280 -160310 -160240 -160218
106	08:20:00.525	-160294 -160276 -160330 -160378 -160301

Figure 2 - 18 Data view

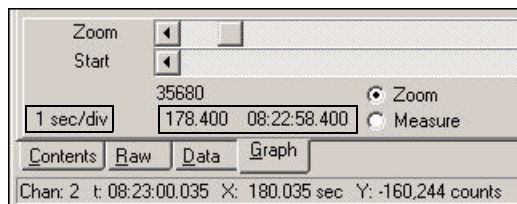
4. Clicking the **Raw** button open a raw data view of the Header Page.

Address	Hex Data	ASCII
0000	44 54 00 06 9A D4 29 40	DT)@ \$
0010	02 11 00 01 01 11 00 C0	0D 82 BC AE 0D 82 B7 AC
0020	44 54 00 06 9A D4 29 40	81 95 72 35 00 00 03 06 DT)@ r5
0030	02 11 00 01 00 00 00 C0	41 38 32 44 32 34 30 30 A82D2400
0040	03 5A 95 69 FF FD 8D B7	FF FD 8D DE FF FD 8D B7 Z i
0050	4B D9 27 CF FE F4 0B 0B	FF F1 00 72 FF 62 FF EC K ' r b
0060	00 93 FF CE 39 8D EA 7D	CF 05 D7 F0 2D 05 DE 27 9 } - ' =
0070	04 D1 35 95 00 0A 00 13	00 02 00 8E AE 3D FD 90 5
0080	15 55 6A A5 41 D9 1B 08	06 FA E9 24 D1 D9 BC 40 Uj A \$ @
0090	3C 06 29 C9 14 05 E3 15	11 C1 13 57 9D 20 33 C7 <) W 3
00A0	18 09 39 BB FF 79 00 1E	00 99 FF A9 FF A8 00 89 9 y
00B0	FF 51 00 9E 00 A5 FE F6	5E 13 FB 36 AD 1F 0B F7 Q ^ 6
00C0	2A AA 50 00 FF 70 00 72	00 A1 FF 54 00 5F FF 93 * P p r T _
00D0	FF CD 00 8E FF 76 00 6A	FF AF FF 9C 00 AA FF E2 v j
00E0	46 16 B4 12 CA D0 4D 0B	CE F1 EF BB E1 DA 62 1D F M b
00F0	FF B7 00 9D 00 8F FF 7F	00 56 FF A2 FF 57 00 B2 V w
0100	00 00 00 00 FF 48 FF F6	00 8C FF 51 0A D4 38 78 H Q 8x
0110	10 7E B0 EF 00 2B 00 13	00 18 FF 60 CD 00 28 B3 ~ + (
0120	00 55 00 7D FF 2E 00 85	FF EC 00 10 00 95 FF 46 U } . F
0130	55 DB BE 60 FF 62 FF 9E	00 83 00 54 EB 0C DE 4B U ` b T K
0140	00 00 00 00 47 BC 4F 09	FF 54 FF D2 3D F6 1D 0A G O T =
0150	D7 2D DF D8 0B 28 26 02	EF D1 38 F8 BF 17 3E 90 - (& 8 >
0160	00 05 00 9B FF 64 00 5E	00 47 FF B3 00 A6 FF 97 d ^ G
0170	FF 70 00 46 ED C1 14 CD	1A 45 10 68 B6 EE 29 9D p F E h)
0180	00 00 00 00 17 29 0F B8	10 1B C1 57 B7 3B 06 BA) W ;

5. Select the **Contents** button to return to the table of contents to view another part of the file.

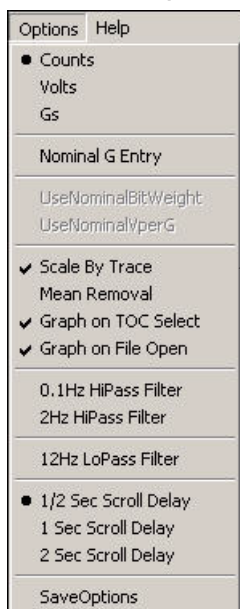
2.9 Options menu

The RT_view program has several viewing options that can be applied as each screen of data is viewed. Placing the mouse cursor anywhere in the graphic area displays on the status line the cursor position in the graph. The status line displays **x** and **y** values.



Displays mouse position with channel number time, with X and Y coordinates

1. Select the drop-down **Option** menu to allow graphing of the event data with different units (Counts, Volts, or G's), set G_Entry options, add viewing options, and to save present options as default.



Viewing options

Save options as default

Figure 2 - 19 Counts option



Note: Select the *Graph on TOC Select* option to open any data view with the graphical view option as default.

2. Select the **counts** option to view the data in raw digital counts.

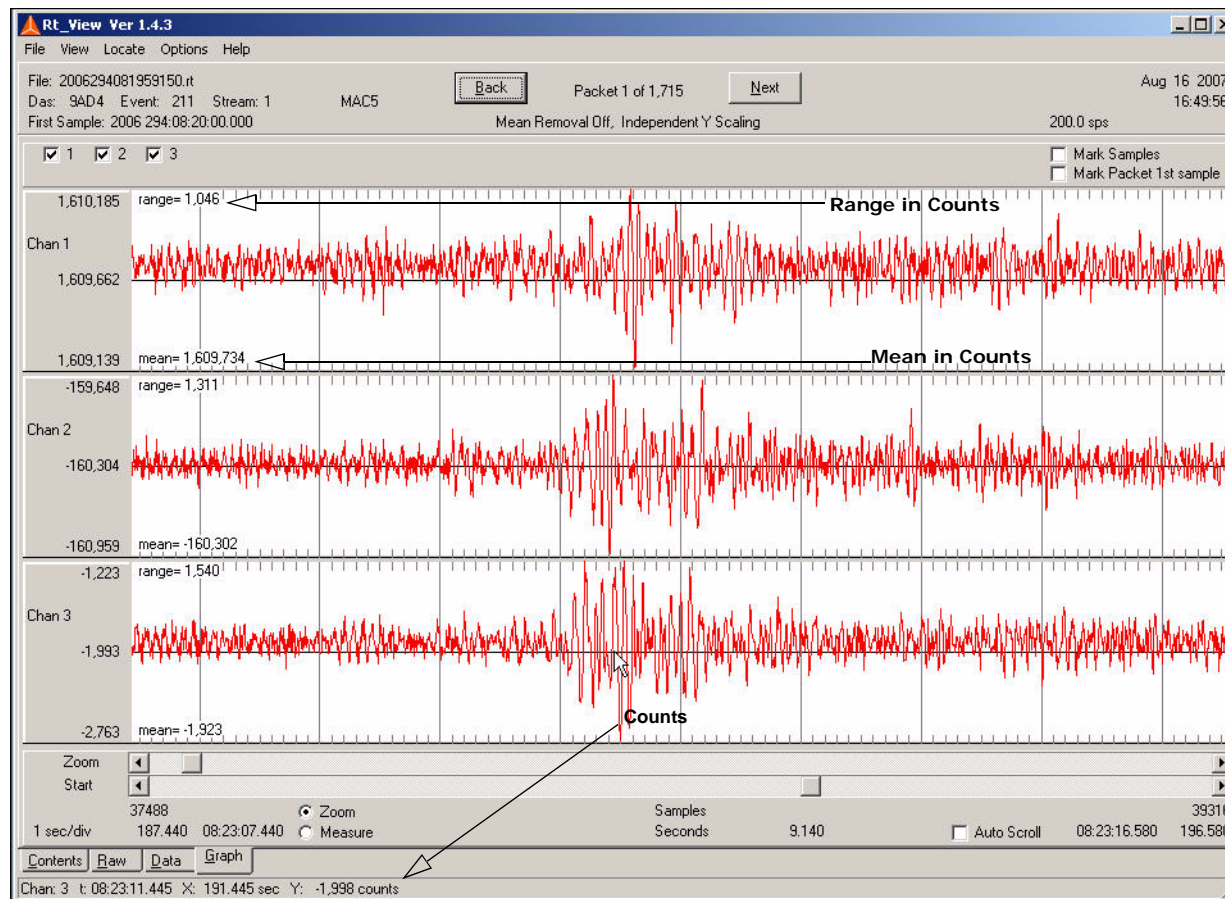


Figure 2 - 20 Counts display example



Note: Counts updated from cursor position are displayed on the bottom of the window. Range, Mean, and status line Y values are in counts.

2.9.1 Using the Volts option

1. Select the **Volts** option to view the data with volts as the units of measurement.

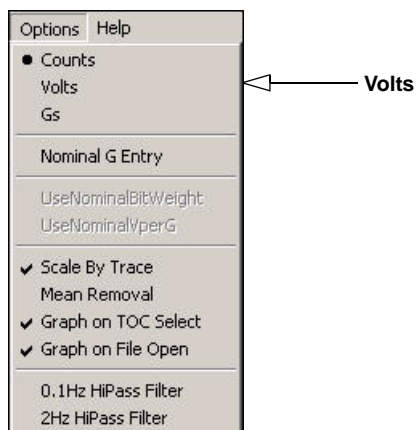


Figure 2 - 21 Volts option

2. The volts per count conversion is automatically read from the Event Header packet (a true Bit Weight field).

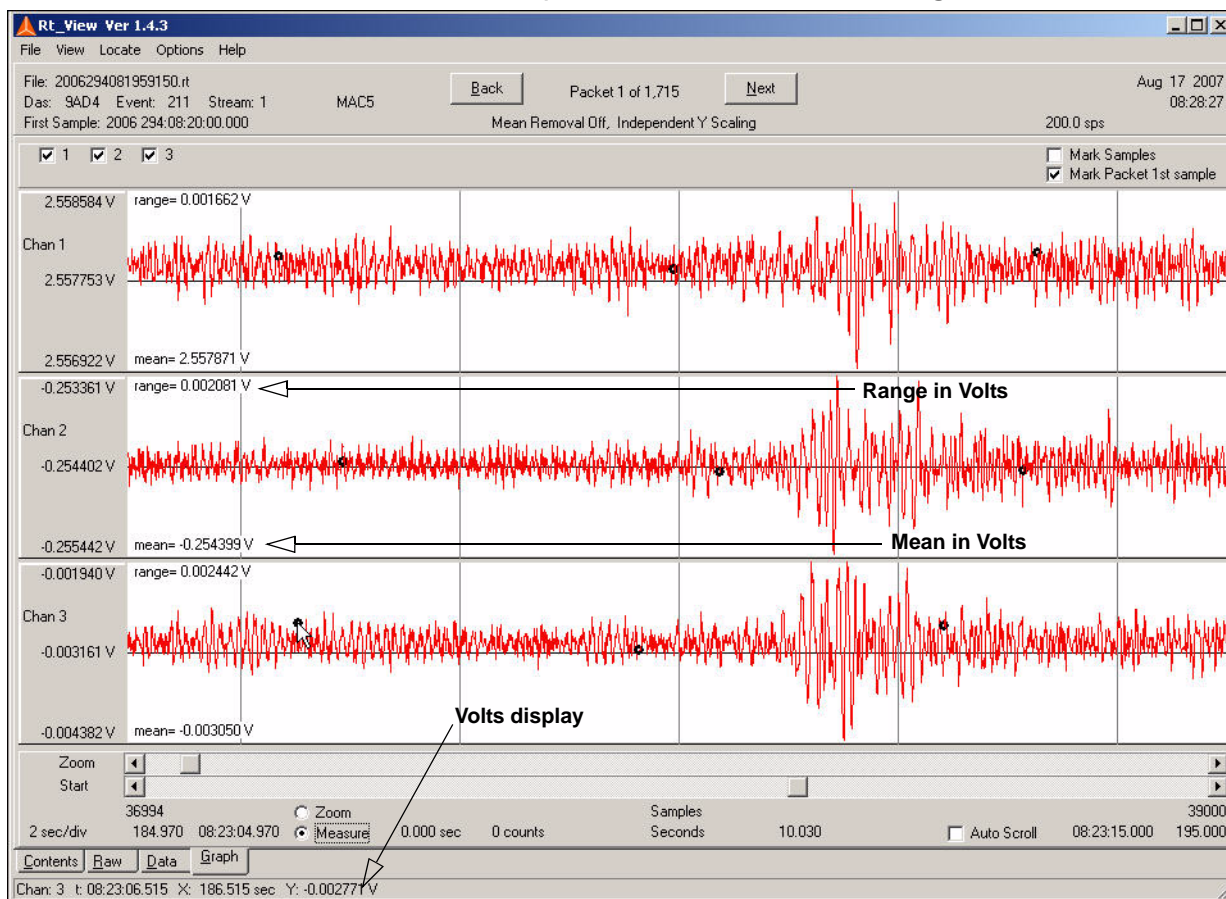


Figure 2 - 22 Volts display example



Note: Volts updated from cursor position are displayed on the bottom of the window. Range, Mean, and status line Y values are in volts.

2.9.2 Using the G's option

1. Select the **G's** option to view the data with G's as the units of measurement.

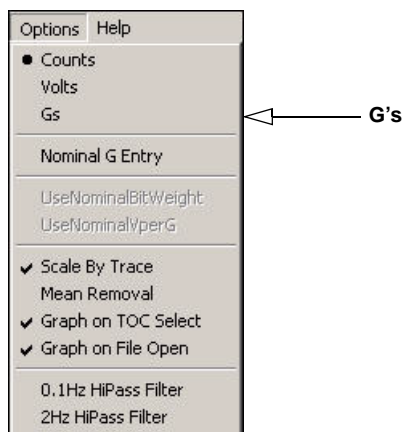


Figure 2 - 23 G's option

2. The window refreshes to view the data with G's as the units of measurement.

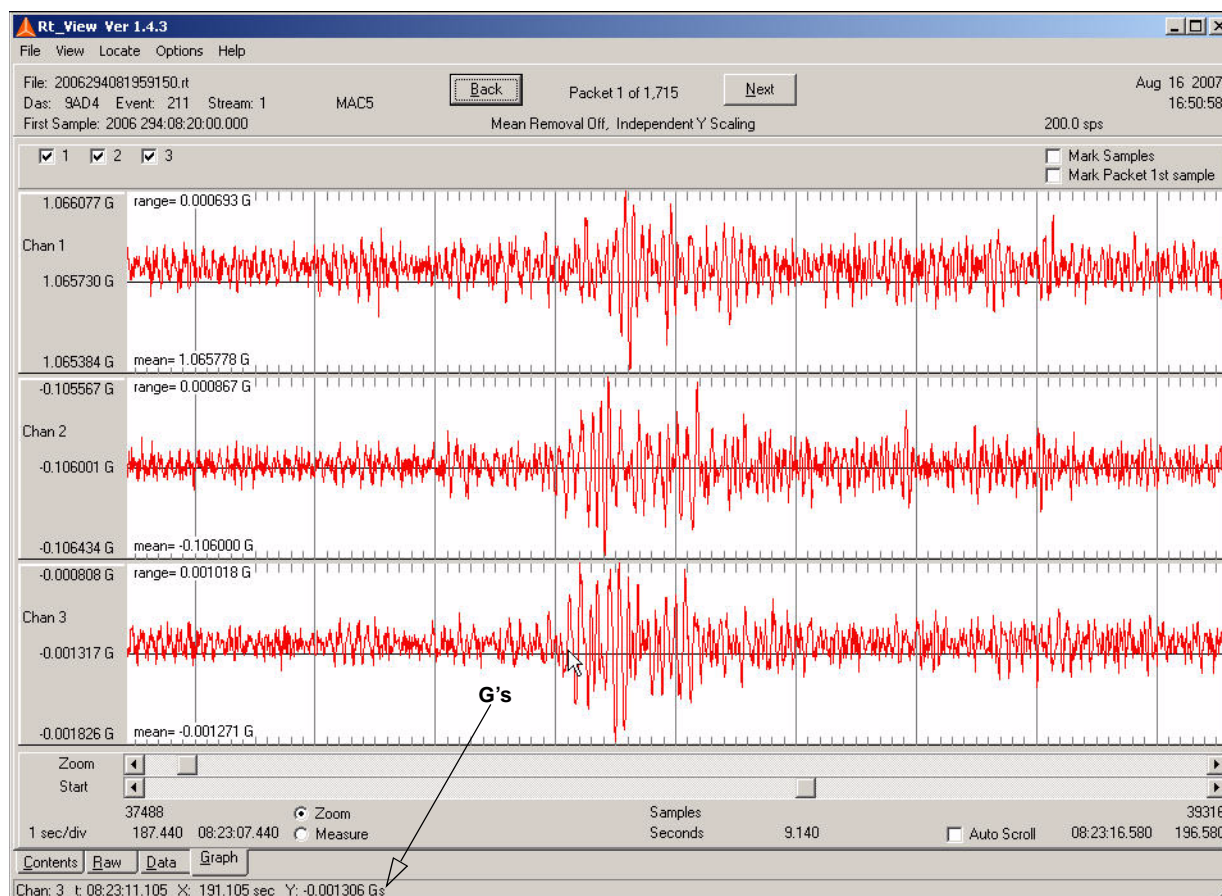


Figure 2 - 24 G's display example



Note: G's updated from cursor position are displayed on the bottom of the window. Range, Mean, and status line Y values are in G's.

2.9.3 Using the G's entry option

Nominal G entry is used to set default values for when they are not present in the event data. If the event data contains these values then they take priority over any of these user entered values.

1. To change the per channel volts per G conversion value use the **G's entry** option on the **Option** menu.

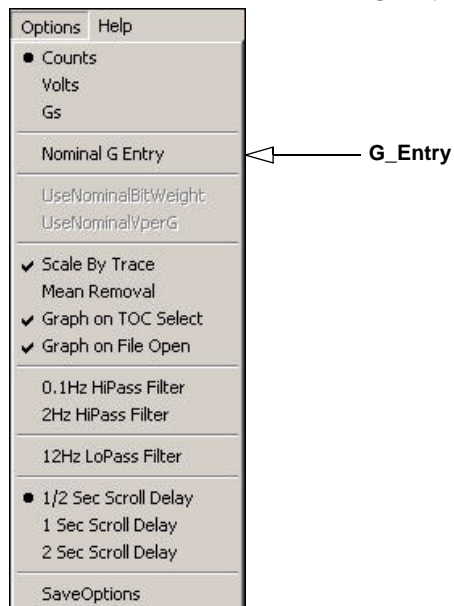


Figure 2 - 25 G_Entry option

2. Under the **Options** menu, select the **Gs_Entry** option.

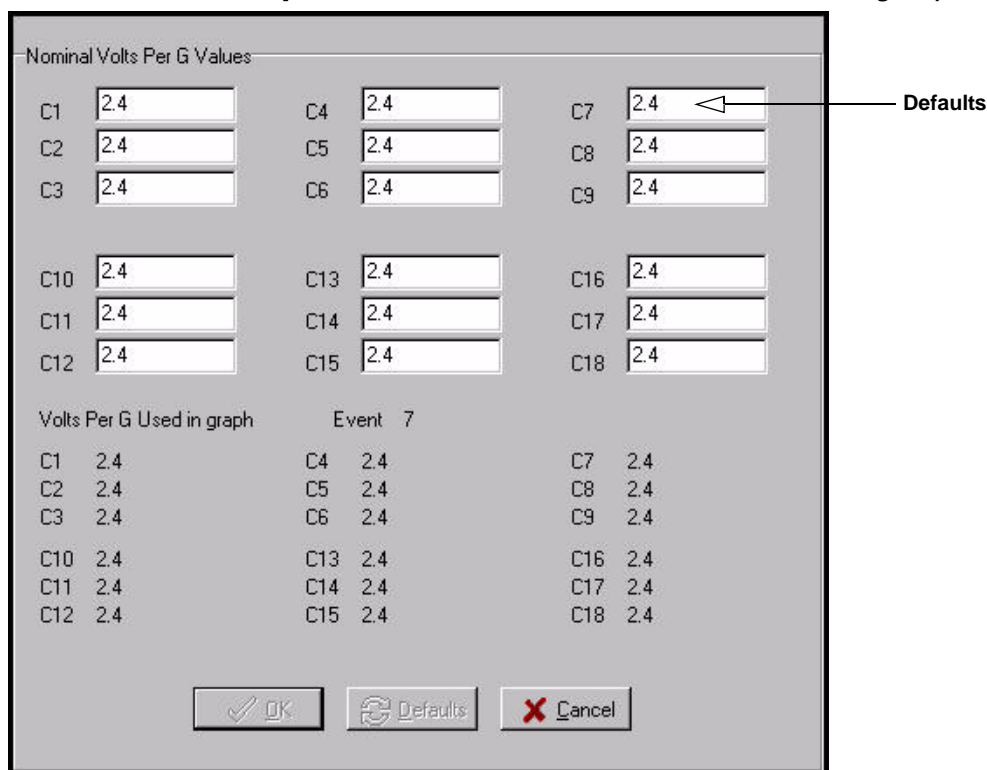


Figure 2 - 26 G_Entry display

If the defaults icon is disabled (grayed out) the RT_View.ini file must be updated with any windows editor to enable editing.

1. Open the RT_View.ini file.

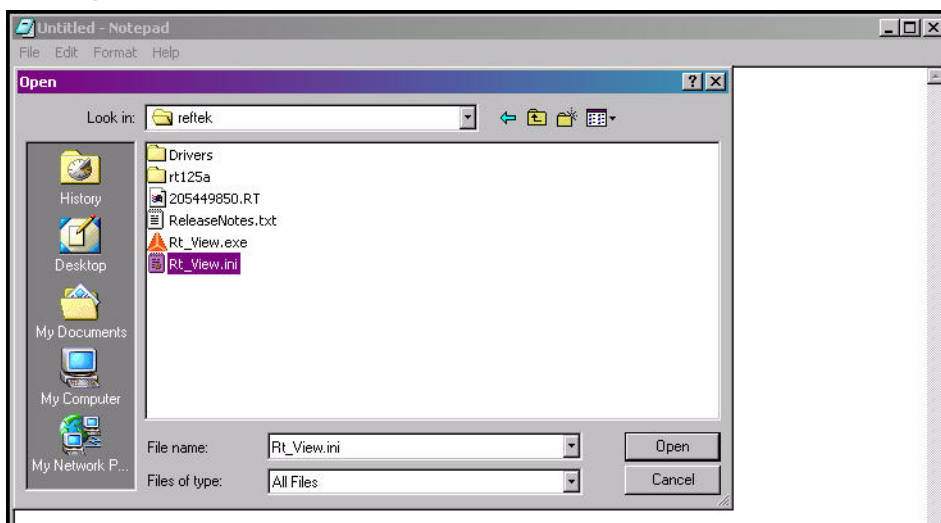
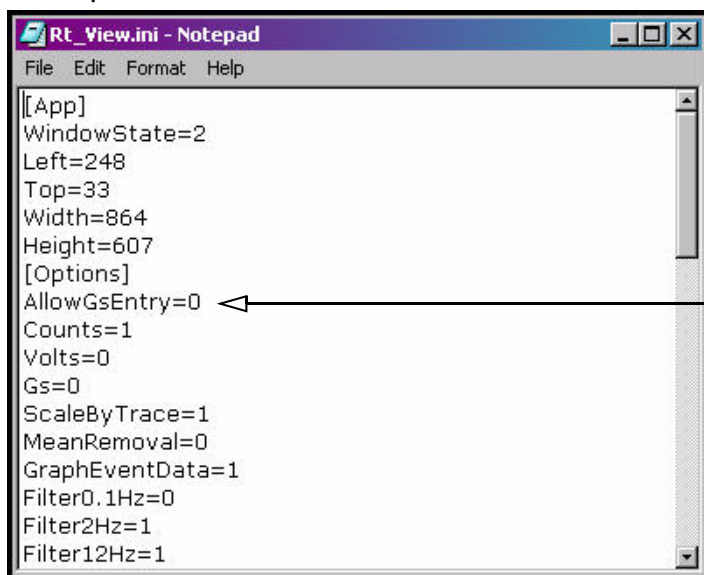


Figure 2 - 27 Edit RT_View.ini file

Example RT_View.in file



Change this value to a 1 to allow editing of default values.

Figure 2 - 28 RT_View.ini file

2.9.4 Using Independent-Y-Scaling (Scale By Trace)

Scale-by-trace (in the option menu) is defined as each trace separately auto-scaled in the Y-axis (amplitude).

If Scale-By-Trace is on the display reads "Independent Y Scaling".

If Scale-By-Trace is off the display reads "Common Y Scaling".

With these enabled or disabled the window is updated as shown below with the current option selected.

1. Select the **Scale By Trace** option on the **Option** menu to enable this option.

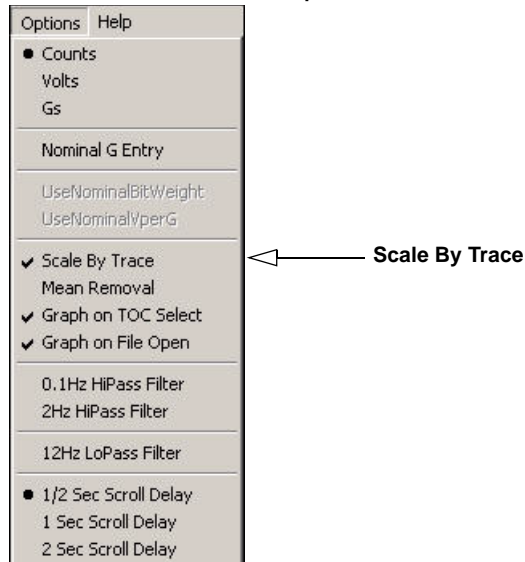


Figure 2 - 29 Scale By Trace option

2. The screen redraws with **Scale By Trace** enabled.

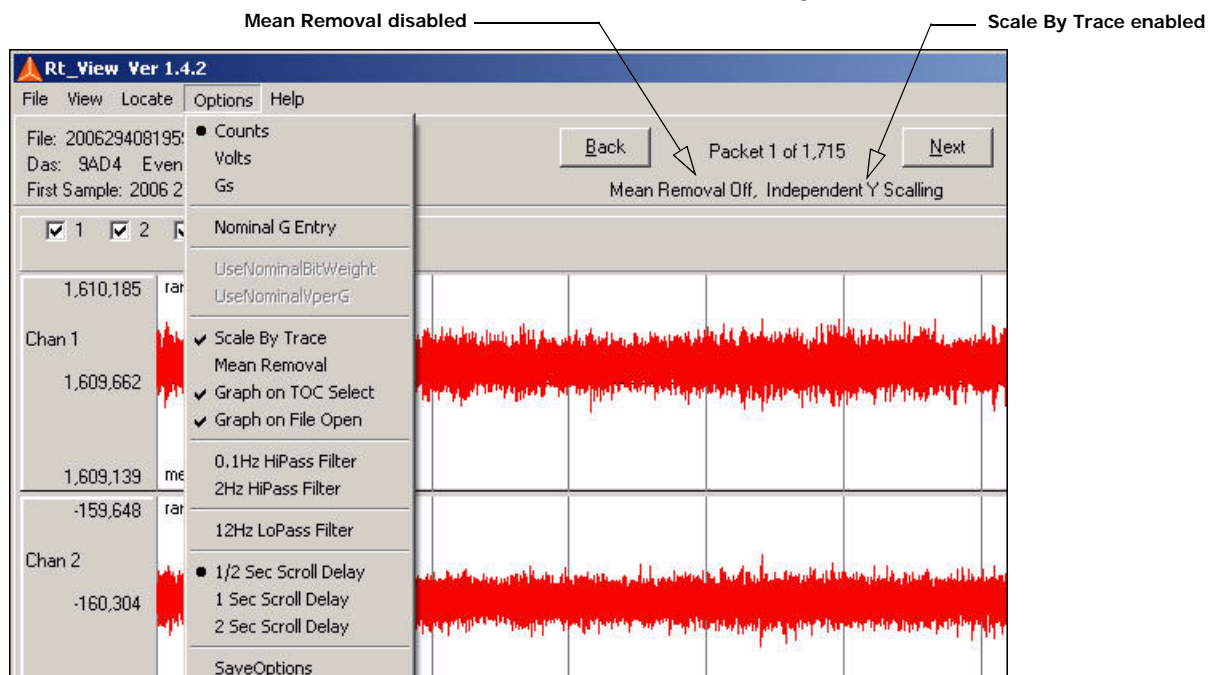


Figure 2 - 30 Counts display with Scale By Trace enabled

2.9.5 Using the Mean Removal option

Mean removal is when an arithmetic mean of the entire event is subtracted from each data point (or sample).

With these enabled or disabled the window can be updated as shown below with Common-Y-scaling and Mean Removal Off.

1. Select the **Mean Removal** option on the **Option** menu to enable this option.

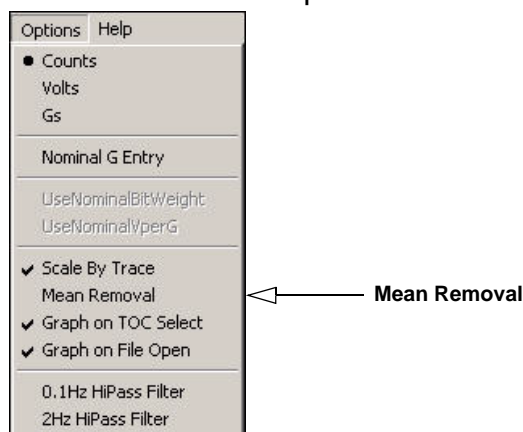


Figure 2 - 31 Mean Removal option

2. The screen redraws with **Mean Removal** and **Scale By Trace** enabled

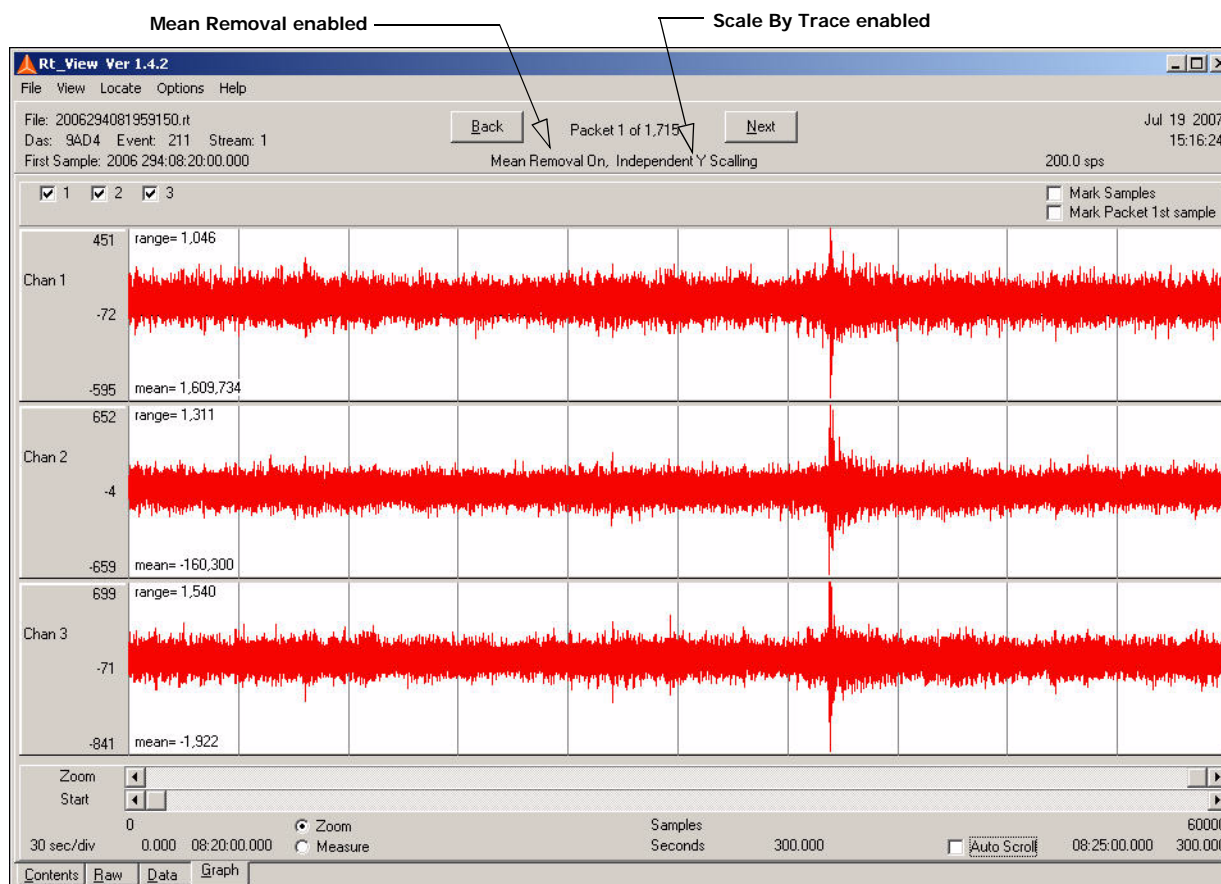


Figure 2 - 32 Counts display example with Mean Removal enabled.

2.9.6 Using the Data Filtering option

Data filtering is used to allow the user to view the event data as the triggering software in the DAS does.

1. Select the **2Hz HiPass Filter** and **12Hz LoPass Filter** option on the **Option** menu to enable this option.

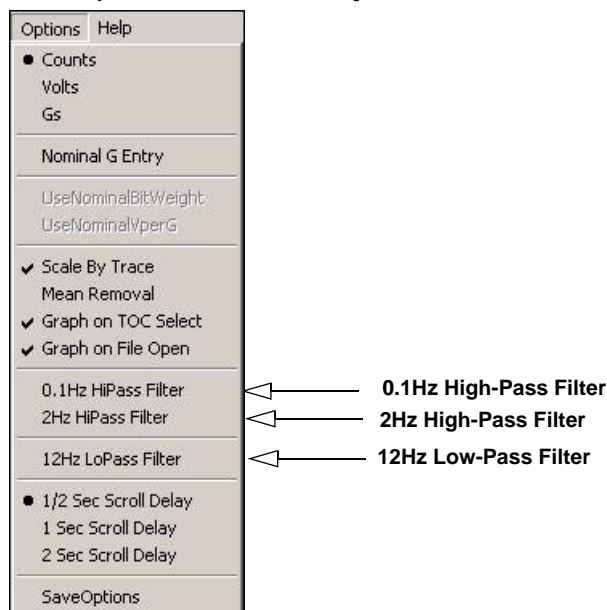


Figure 2 - 33 Mean Removal option

2. The screen redraws with **2Hz HiPass Filter** and **2Hz LoPass Filter** enabled

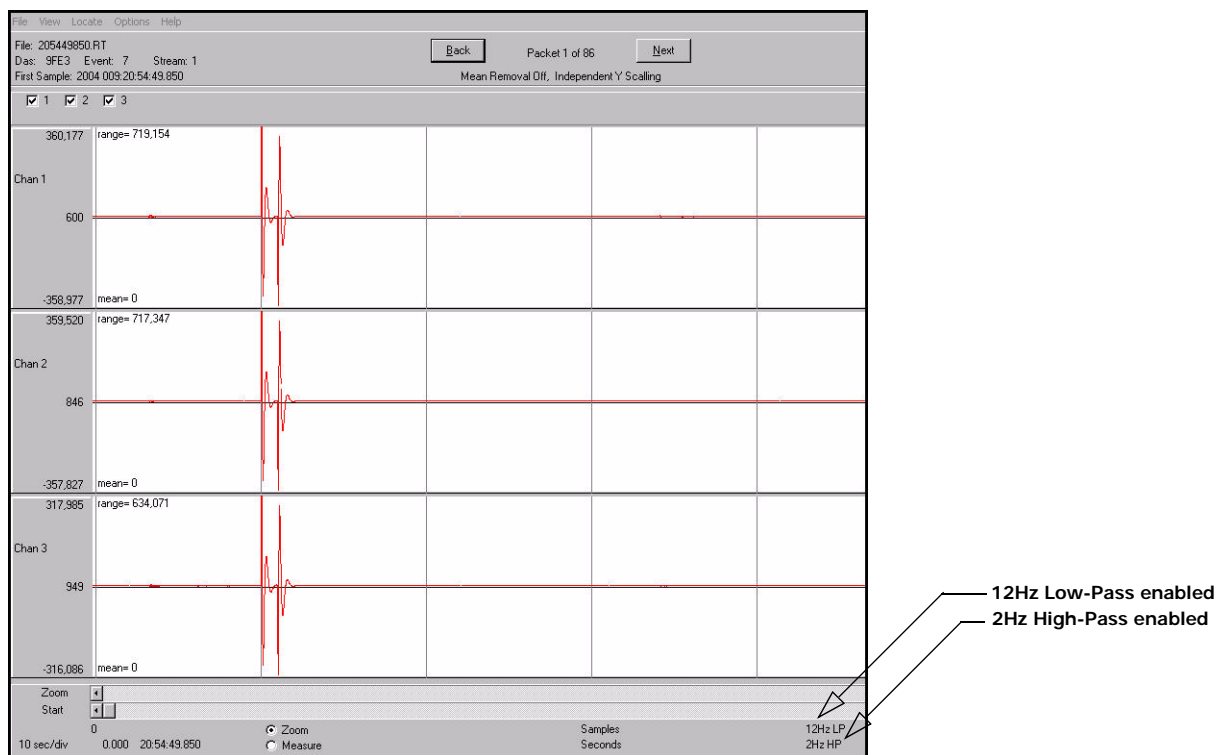


Figure 2 - 34 Display example with filtering options enabled.

This detail view shows the 2Hz HiPass Filter and 12Hz LoPass Filter indicators as enabled.

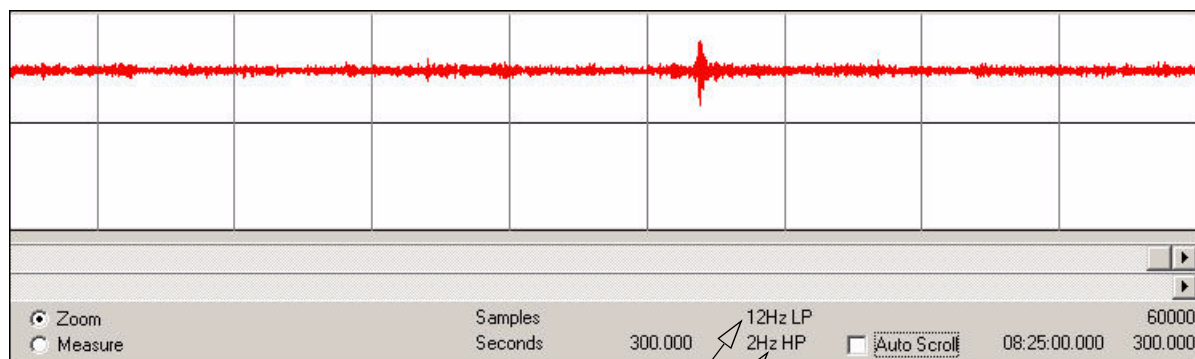


Figure 2 - 35 Display example with filtering indicators enabled.

2.10 Zooming

1. It is also possible to zoom in to an area of data by using the left mouse button to select a window area in one data window as shown below, and dragging across to select a new viewing window.

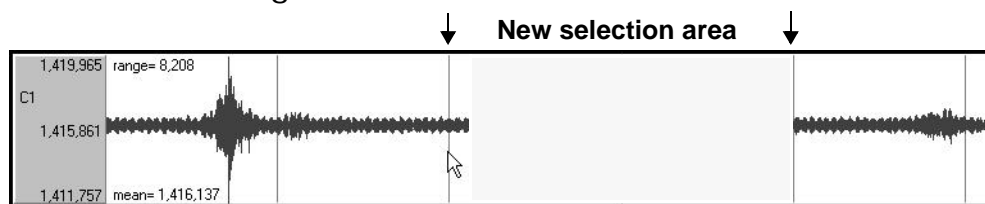


Figure 2 - 36 Dragging a new selection area

2. A new window is displayed based on the new selection area. All channels are zoomed the same amount.

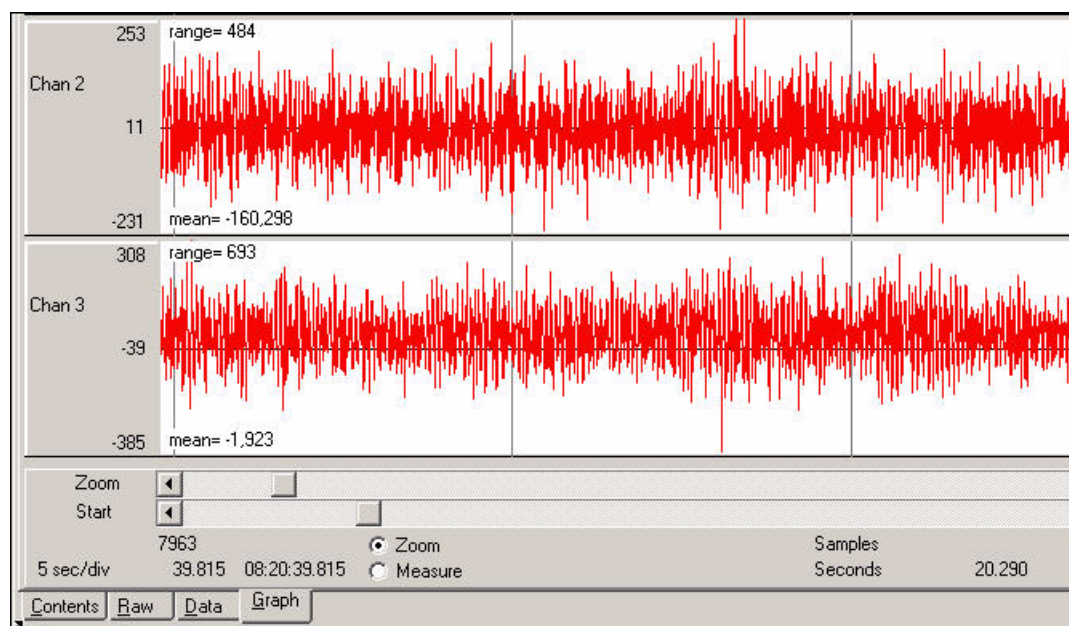


Figure 2 - 37 Zoomed data view



Note: It is possible to undo up to 99 zoom in operations.

Note: The scroll bars may also be used for a zoom operation but changes are not remembered for undo operations.

3. To cancel a zoom right click in the graph. Each right click cancels one level of zoom and restores the previous display.

2.11 Measure

It is also possible to measure amplitude or time

1. Select the **Measure** option check box.

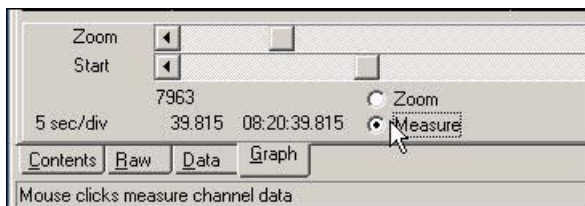


Figure 2 - 38 Measure options

2. Select an area to measure using the mouse.
3. Note the measurement in the area shown below in units of time and amplitude.

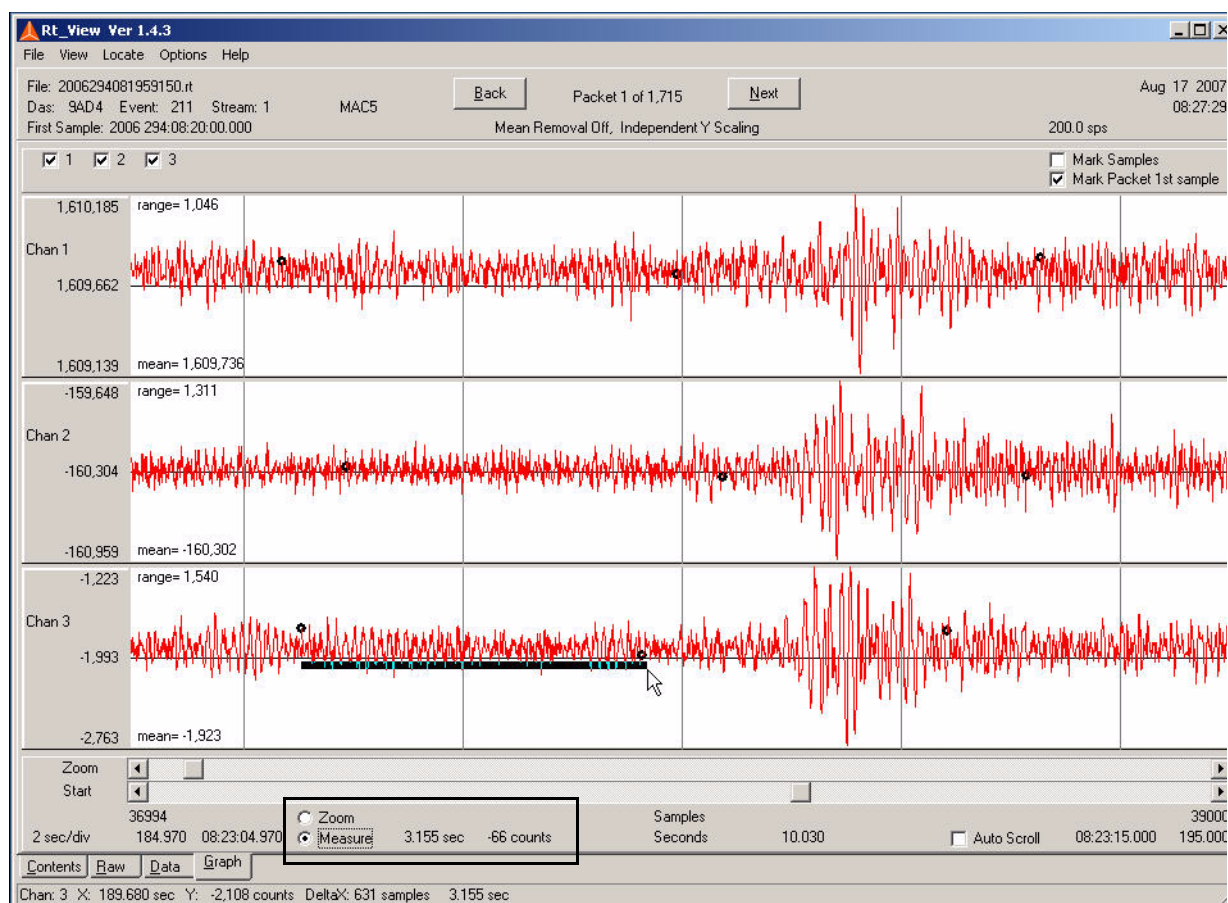


Figure 2 - 39 Measuring

2.12 Viewing a State-of-Health file

To view a State-of-Health file:

- Drag and Drop files on an **RT_View** shortcut or executable.
 - Drag and Drop files onto a running **RT_View** application.
 - Use the **File** and **Open** menu from the drop-down menu after opening the **RT_View** program.
1. Close any open file first before opening a State-of-Health file by selecting **File** and **Close**.
 2. Open a State-of-health file by selecting the file and using the **Open** button.

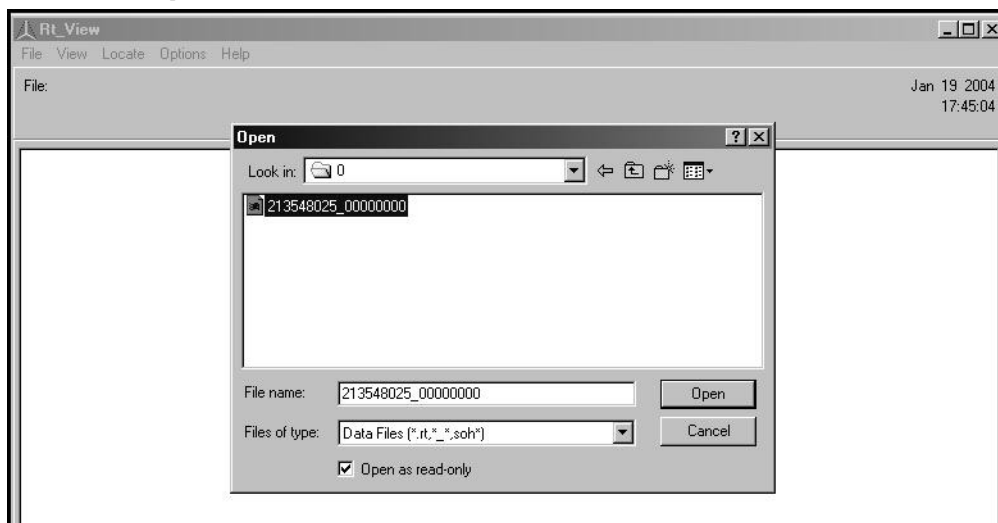


Figure 2 - 40 Select a State-of-health file

3. Double-clicking a **State of Health Info** entry in the table of contents allows viewing of the state-of-health packets in the file.

The screenshot shows the RT_View application window with the 'File: soh0' and the date 'Jan 21 2004 15:04:33'. The table below displays the state of health contents.

Packet	Description	Unit	Time	Event	Stream	Channel
1	State Of Health Info	9181	2004 005:00:00:00.000			
16	Station-Channel Info	9181	2004 005:22:00:00.000			
18	Operating Mode Params	9181	2004 005:22:00:00.000			
19	Data Stream Params	9181	2004 005:22:00:00.000			
20	Aux Parameters	9181	2004 005:22:00:00.000			
21	Cal Parameters	9181	2004 005:22:00:00.000			
22	State Of Health Info	9181	2004 005:22:00:06.000			

Figure 2 - 41 State of Health contents.



Note: The file classifications at the bottom of the display reveal the supported viewing formats of the file.

4. Clicking **Raw** allows different views of the data.

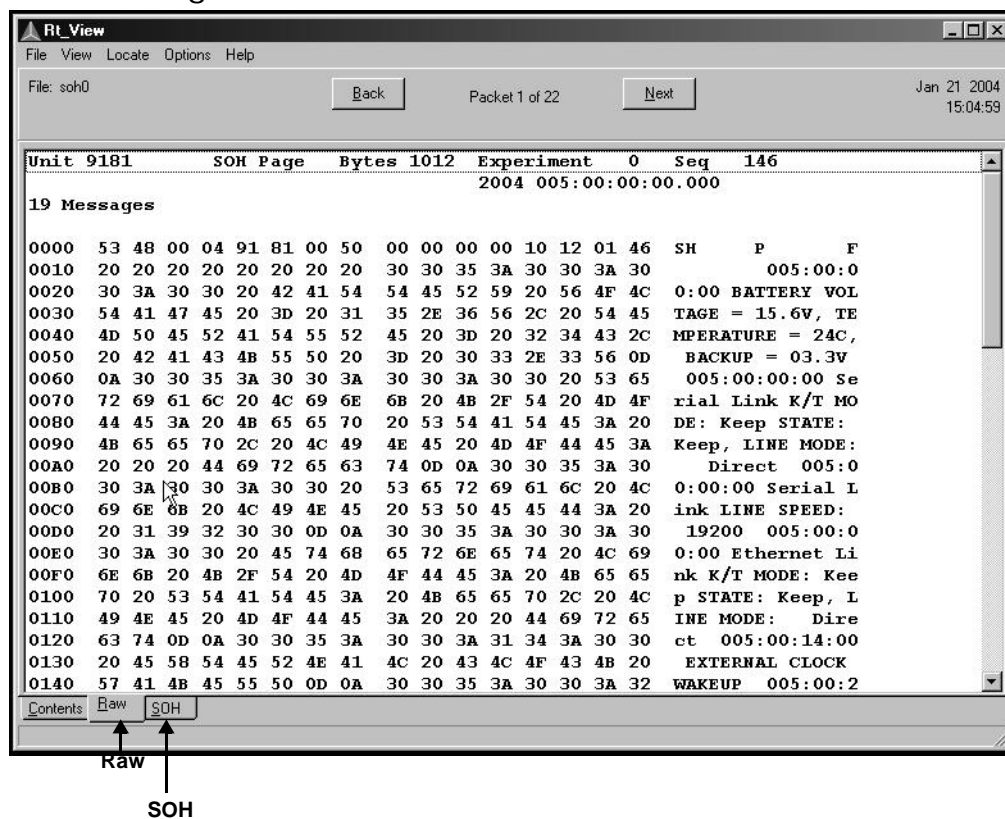


Figure 2 - 42 Event file contents

- Clicking **SOH** tab opens an entry listing view of the SOH packet.

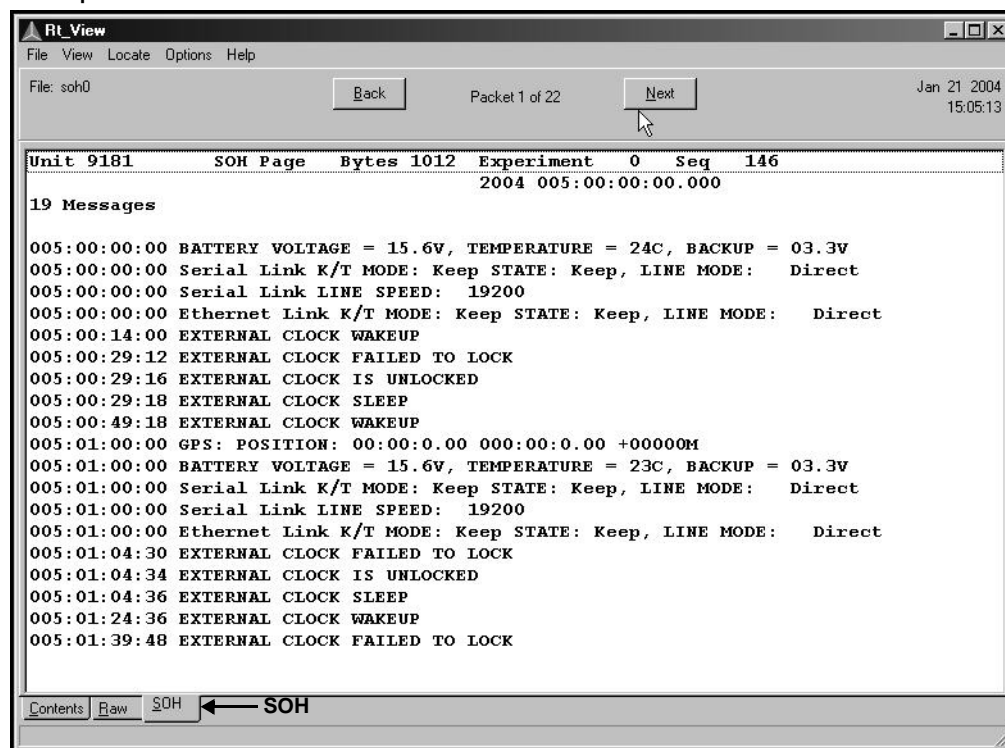


Figure 2 - 43 SOH view