



Elecard Stream Analyzer

User Guide

Version 2.0

Notices

Elecard Stream Analyzer User Guide

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1. Introduction

1.1 Preface

Elecard Stream Analyzer is a powerful tool designed for syntax analysis of encoded media streams and presentation of the analysis log in a human readable form. Stream Analyzer operates with MPEG-1 Video/Audio, MPEG-2 Video/Audio, AAC, Dolby Digital Audio, AVC/H.264 and VC1 files.

1.2 Describing Elecard Stream Analyzer

The following section defines the specifications and features of Elecard Stream Analyzer.

1.2.1 Supported Media Types

Elecard Stream Analyzer supports the following formats:

- MPEG-1 System Stream (ISO/IEC 11172-1)
- MPEG-1 Video (ISO/IEC 11172-2)
- MPEG-2 Video (ISO/IEC 13818-2)
- MPEG-2 Program Stream (ISO/IEC 13818-1)
- MPEG-2 Transport Stream (ISO/IEC 13818-1)
- AVC/H.264 video stream (ISO/IEC 14496-10)
- MPEG-1/2 Audio Layer 1/2/3 (ISO/IEC 11172-3 and ISO/IEC 13818-3)
- Dolby Digital Audio (ATSC A-52)
- AAC (Advanced audio coding)
- MPEG-4 Video
- VC-1 Video

1.2.2 Features

Elecard Stream Analyzer implements the following features:

- Selection of packets in a text
- Selection of packets by PID and StreamID
- Stream viewing in the HEX mode
- Storing the information about the stream and currently selected packets into a .TXT file
- Search of elements by offset, PID and text
- Stream error report generation
- Presentation of the interleaving between two streams as a diagram
- Calculation of the overhead in transport, program and system streams

1.3 Using this Guide

1.3.1 Purpose

This guide is intended to help the user utilize the Elecard Stream Analyzer. It describes the Stream Analyzer GUI, settings and functions and provides instructions for the Stream Analyzer use.

1.3.2 Topics Covered

- **Section 1: Introduction** – provides a general overview of Stream Analyzer and describes the purpose of the document and its contents.
- **Section 2: Using Elecard Stream Analyzer** – describes the Stream Analyzer GUI and provides instructions for comparing video streams, and viewing the results of comparison.

1.4 System Requirements

1.4.1 Hardware Requirements

- SSE-enhanced CPU (Intel® Pentium III, Celeron, AMD® Athlon, Opteron etc.)
- 128 MB RAM

1.4.2 Software Requirements

- Windows® 2000/XP/2003 Server

1.5 Licensing and Technical Support

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2. Using Elecard Stream Analyzer

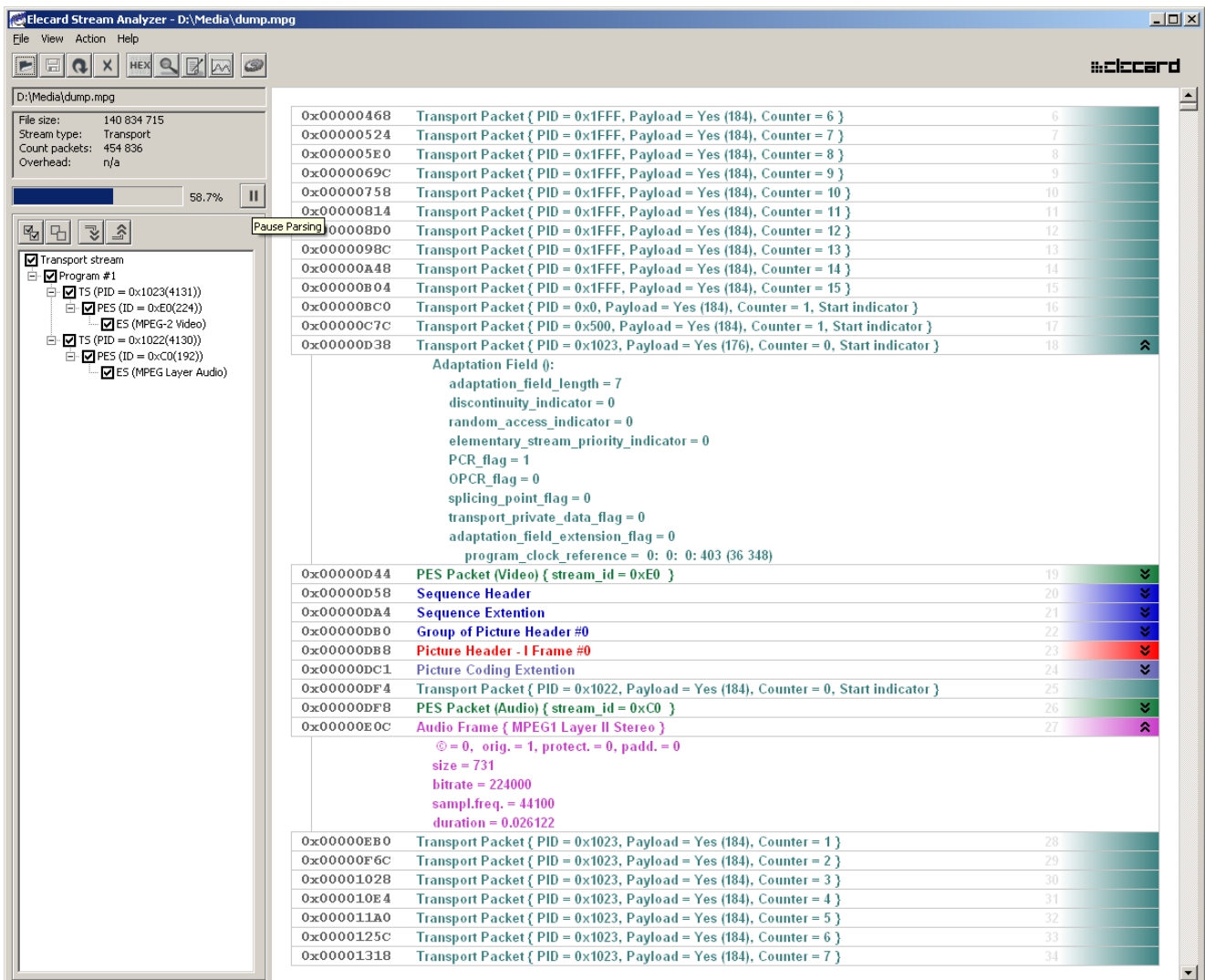
2.1 Introduction

The following section describes the Elecard Stream Analyzer GUI (graphic user interface), its features, and instructions for stream analysis.

2.2 Describing Elecard Stream Analyzer GUI

The following section describes the Elecard Stream Analyzer GUI.

Figure 1. Elecard Stream Analyzer GUI












2.2.1 Toolbar

Figure 2. Elecard Stream Analyzer GUI - Toolbar



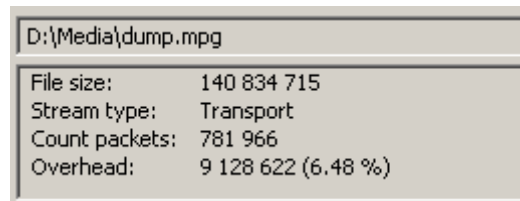
The following table describes the Stream Analyzer Toolbar.

Table 1. Elecard Stream Analyzer Toolbar

Button	Function
 Open Stream	Opens a new media file for analysis.
 Save information about stream	Opens the Save dialog box.
 Resent file	Opens the recent files.
 Close file	Closes the file.
 HEX Viewer	Opens/closes the HEX-viewer.
 Search	Opens/closes the Search dialog box.
 Report	Opens/closes the Report dialog box.
 Times Dynamics	Opens/closes the dialog for analyzing the dynamics of timestamps.
 Settings	Opens the Settings dialog box.

2.2.2 Stream Info Panel

Figure 3. Stream Info Panel





This panel provides the information about the path of the current file, the file size, stream type, overhead value and the number of detected packets. Data that are not included into the elementary video and audio streams are the overhead data.

2.2.3 Parsing Progress Panel

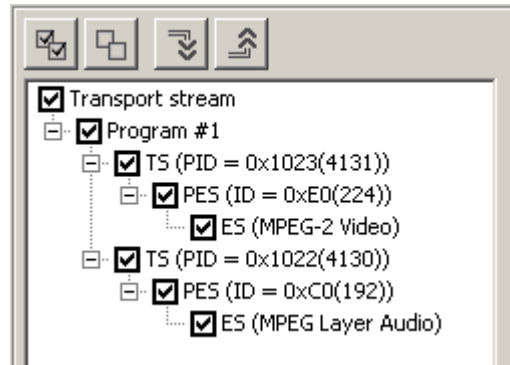
Figure 4. Parsing Progress Panel




This panel indicates the current parser position. Stream parsing can be interrupted and restarted with the  **Pause** and  **Parse** buttons.


2.2.4 Show Packets Panel


Figure 5. Show Packets Panel



The  **Show All** button – displays all elements detected in the stream.

The  **Hide All** button – hides all elements.

The  **Open All** button – opens the element details.

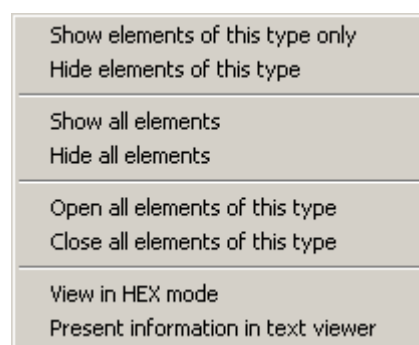
The  **Close All** button – hides the element details.

The **Show Packets** panel displays the stream hierarchical tree. If you clear the check box of any element, it will not be displayed in the main window.

2.2.5 Element Shortcut Menu

The element shortcut menu appears when you right-click an element.

Figure 6. Element Shortcut Menu



Show elements of this type only – Displays the elements of the same type and hides the rest.

Hide elements of this type – Hides all the elements of this type.

Show all elements – Displays all elements detected in the stream.

Hide all elements – Hides all elements.

Open all elements of this type – Displays the details of the elements of this type.

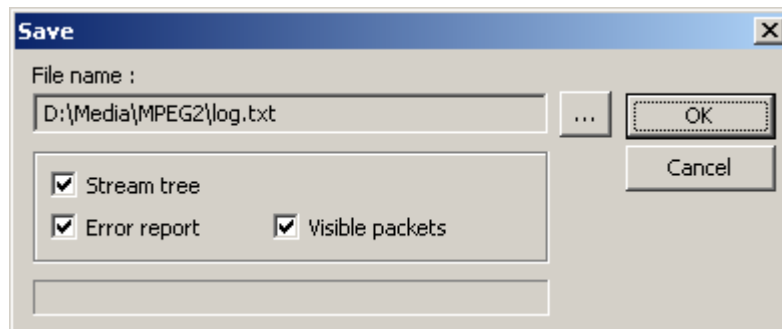
Close all elements of this type – Closes the details of the elements of this type.

View in HEX mode – Opens HEX-viewer and sets the viewing position to the selected element.

Present information in text viewer – Displays the information in text viewer (allows the copying to the Clipboard).

2.2.6 Save Dialog Box

Figure 7. Save Dialog Box



For the stream information saving click **Save information about stream** button and specify the path of a .TXT file. The appeared **Save** dialog box allows changing the path and specifying the information required for saving.

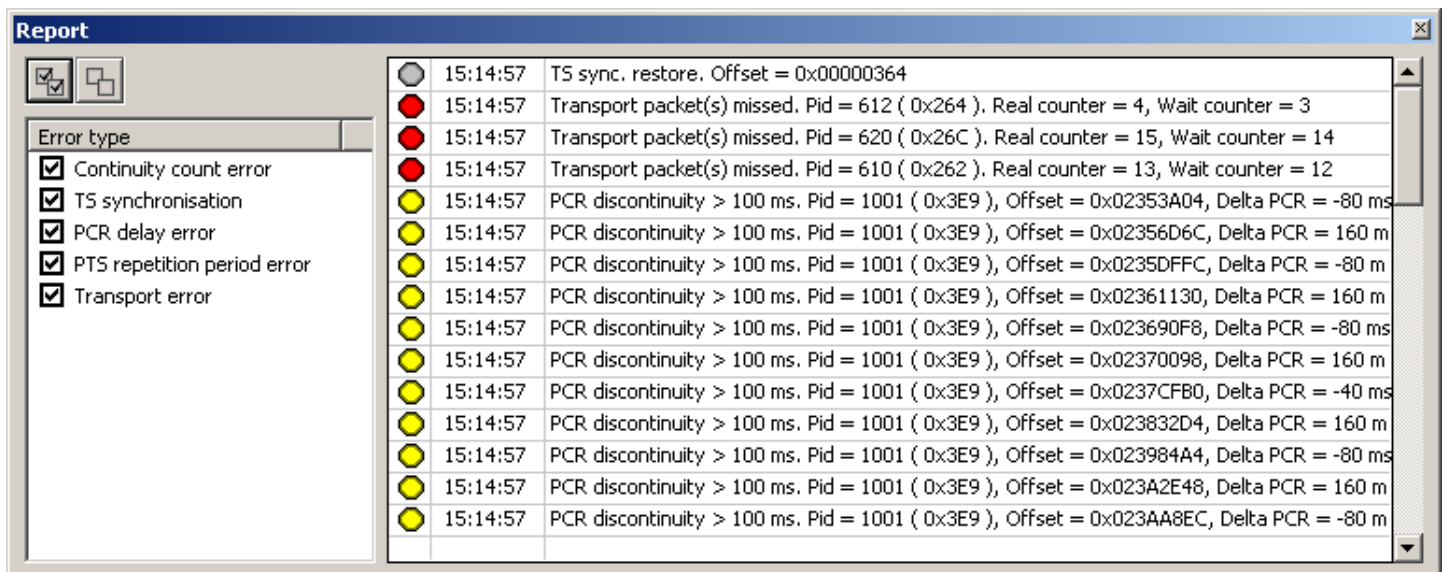
Stream tree – enables saving the information indicated in the **Show Packets** panel.

Error report – enables saving the error message report displayed in the **Report** dialog box.

Visible packets – enables saving the information regarding the elements selected in the **Show Packets** panel.

2.2.7 Report Dialog Box

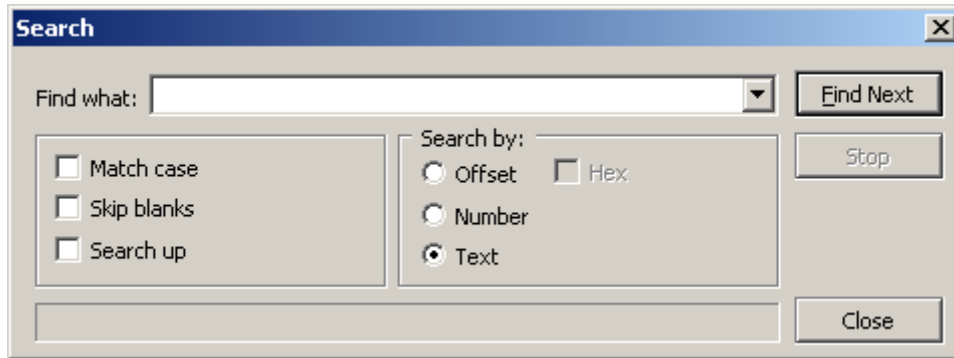
Figure 8. Report Dialog Box



The Report dialog box represents the report on errors in the stream. In the left pane there is a list of error types. In the right pane there are the errors of the selected types. Double-clicking the line in the right pane sets position in the main window to the packet comprising the selected error.

2.2.8 Search Dialog Box

Figure 9. Search Dialog Box



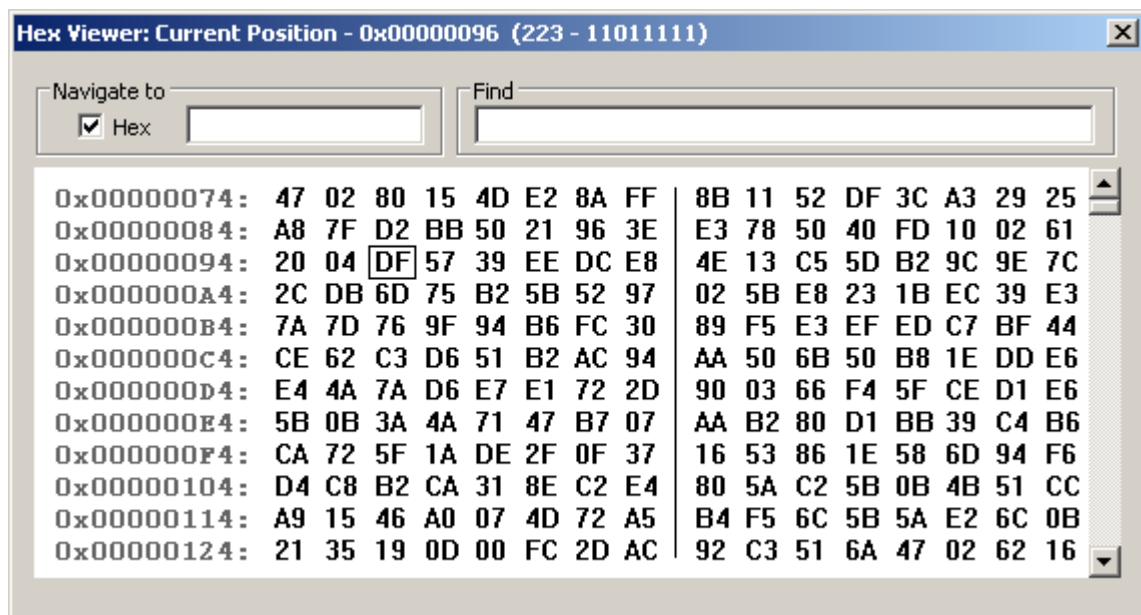
The **Search** dialog box allows searching elements by the following criteria:

- Offset (the packet with the given offset or the next nearest to the given displays in the main window)
- Element number
- Text (shows the search results one by one)

The search by text can takes much time. To cancel it, click the **Stop** button.

2.2.9 HEX-Viewer

Figure 10. HEX-Viewer



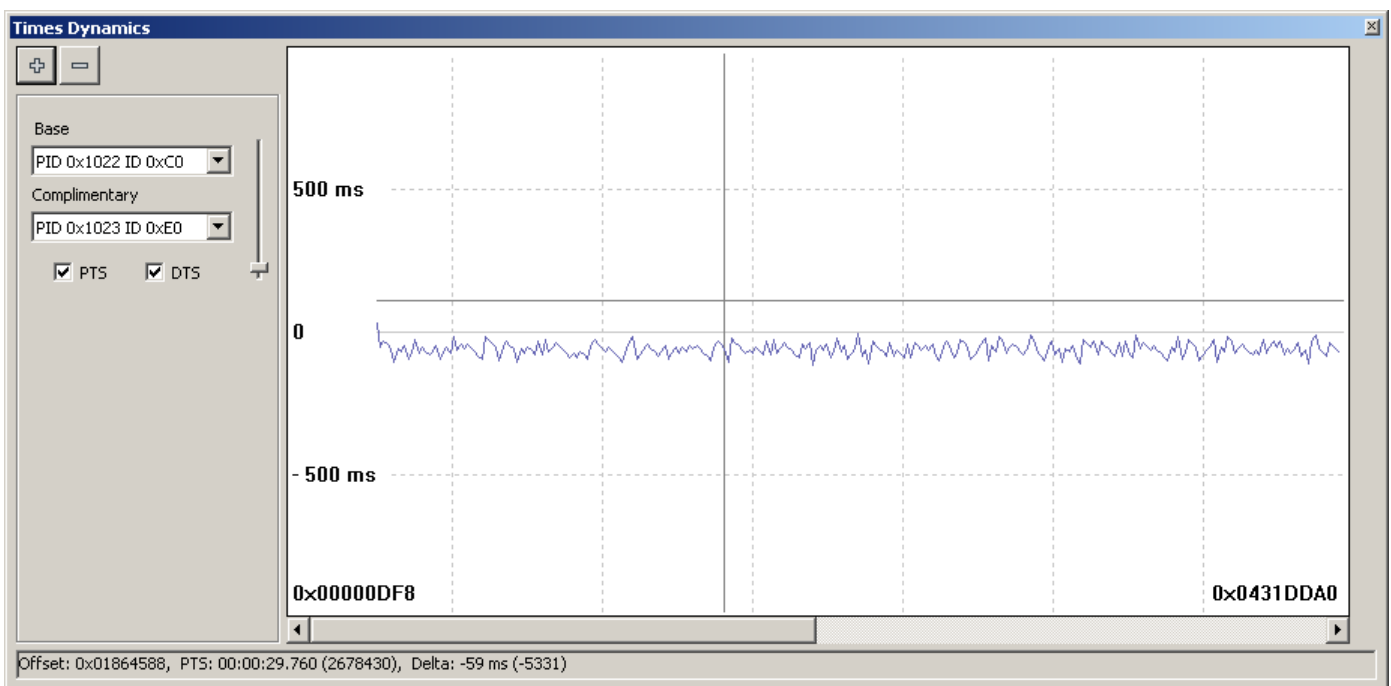
The HEX viewer represents the file in the HEX mode and allows navigation by the offset. The **Hex/Dec** check box defines the offset mode: hexadecimal or decimal. The **Find** field allows

searching the necessary byte sequence in the file (it can be necessary for start-codes searching). To select the current position, click the corresponding byte in the viewer window. The current position and binary and decimal notation of the selected byte are shown on the title bar.

2.2.10 Times Dynamics Dialog Box

The **Times Dynamics** dialog box represents the interleaving between two streams as a diagram. To specify the streams, use the fields **Base** and **Complimentary** in the upper-left corner of the window. The chart can be built using DTSs or PTSs. If DTSs and PTSs are used together, the DTS values are used as primary. Absent DTSs, the PTS values are used.

Figure 11. Times Dynamics Dialog Box

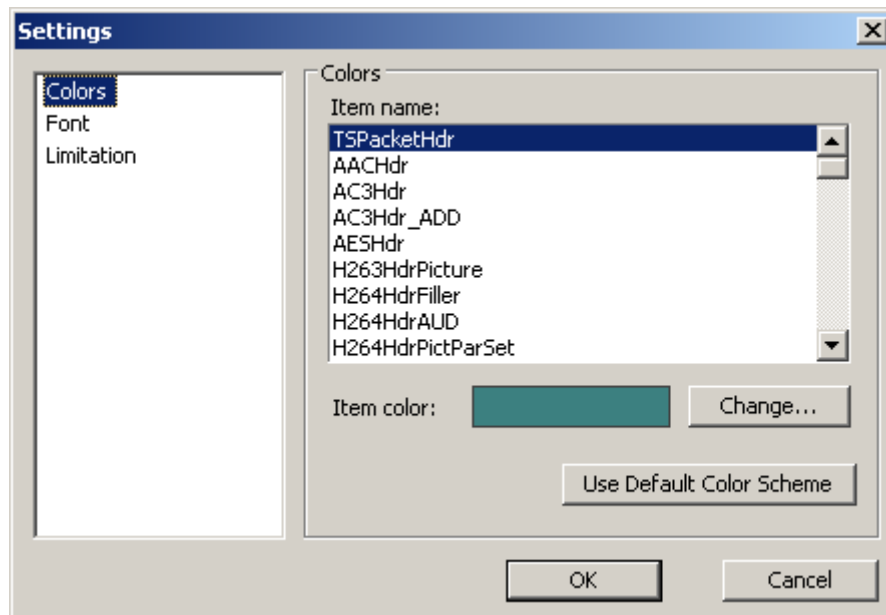


At the mouse pointer movement in the window, you can see the values corresponding to the given points of the graph on the bottom of the window. These values can be fixed by click. Double-click displays the given packet in the main window. You can adjust the scale of the diagram with the slider.

2.2.11 Settings Dialog Box

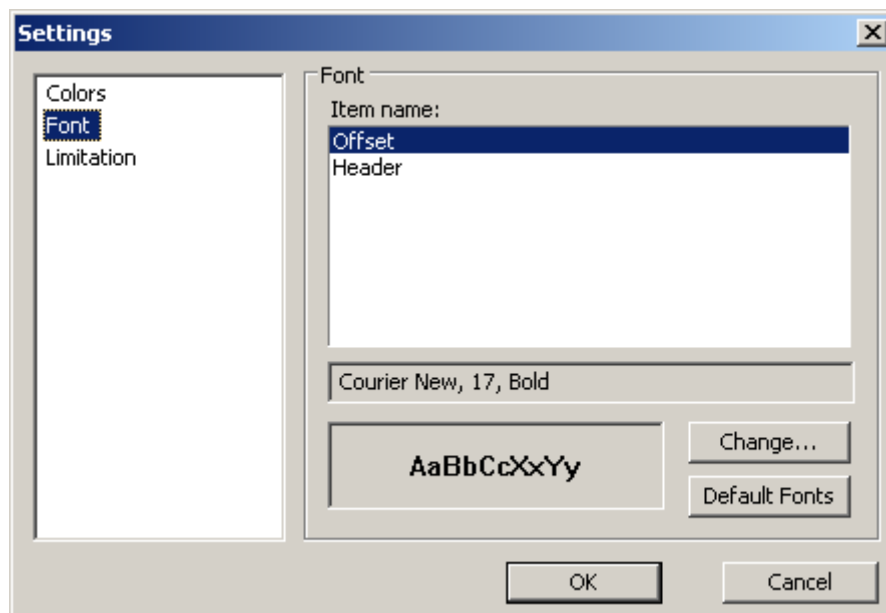
The **Colors** panel of **Settings** dialog box allows user to set display colors for various types of stream headers. The **Change...** button is used for the color adjustment. The **Use Default Color Scheme** button restores the default visualization colors.

Figure 12. Settings Dialog Box - Colors Panel



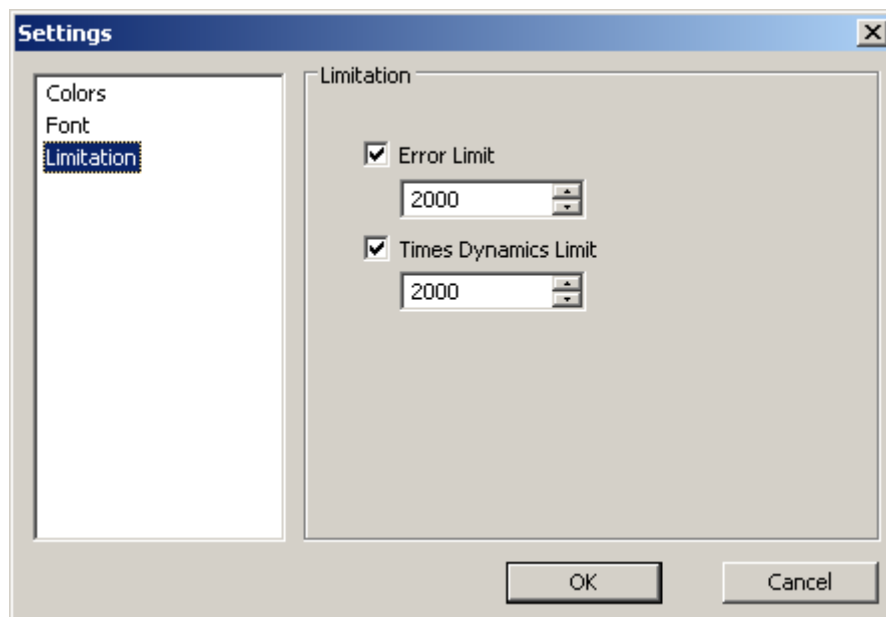
The **Font** panel allows user to set the font type and size for the *Offset* and *Header* elements of the output line. The **Change...** button is used for the font parameters adjustment. The **Default Fonts** button restores the default font parameters.

Figure 13. Settings Dialog Box - Font Panel



The **Limitation** panel allows user to set limitation for the information that is kept by the program.

Figure 14. Settings Dialog Box - Limitation Panel



The **Error Limit** option sets the number of last errors kept in the program memory. If the number of errors exceeds the specified limit, the memory is purged from old errors.

The **Times Dynamics Limit** sets the number of interleaving points kept in the program memory. If the number of points exceeds the specified limit, the memory is purged from old values.

If the **Error Limit** and **Times Dynamics Limit** options are not selected, the limitations are not applied.