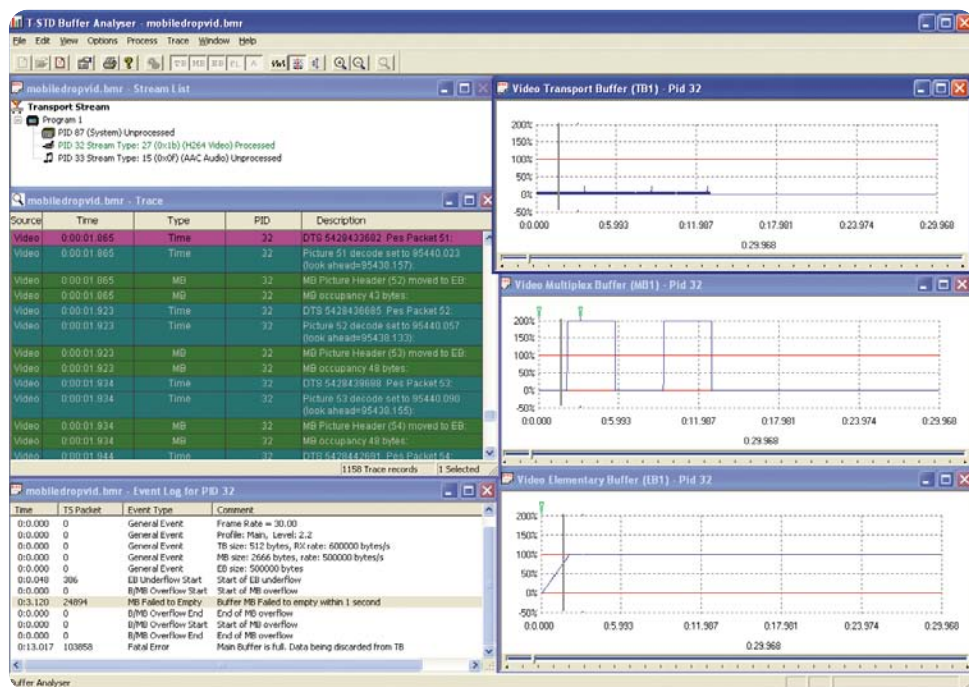


Buffer Analyzer



► Figure 1. Buffer Analyzer.

When developing professional and consumer equipment, particularly encoders and set top boxes, the characteristics of the test streams being either generated or used as stimulus need to be ascertained. Of critical importance amongst these characteristics is adherence to the buffer model. That is, when the stream is processed by a receiver, will any of the internal buffers be caused to either under or overflow. Consequences of these conditions will be freeze frames and receiver resets.

There are two types of buffer model; the one to use by the receiver is signaled within the Elementary Stream itself. The T-STD method is based upon the DTS values within the PES header and can be used for any contained CODEC type. Additionally, certain video CODECs such as MPEG-2 and H.264/AVC may contain buffer parameters within the ES itself. The Buffer Analyser verifies conformance of a stream to the T-STD model. Verification of the H.264/AVC HRD method is covered by the MTS4EA product.

The Tektronix Buffer Analyzer application supports:

- MPEG-2 Video
- H.264/AVC (MPEG-4 part 10)
- MPEG-2 Audio
- MPEG-2 AAC Audio
- AC-3 Audio
- PSI (ISO/IEC 13818 parts 1)

The Solution

The Buffer Analyzer accepts any recorded Transport Stream as an input source. The TS is then de-multiplexed into its component PES, grouped by Program. The user can select one or more PES to analyse for conformance to the T-STD model according to the buffer parameters for the CODEC type in question. General information such as profile and level together with any buffer errors are recorded in a log.

The user may manually set buffer sizes and other parameters prior to analysis, rather than use those specified by the standard or signaled within the stream.

Buffer Graphs

The occupancy level for each buffer within the model (3 for video, 2 for audio and 2 for PSI) is plotted on a graph for each PES being analysed. Graphs may be zoomed for ease of use. A Synchronisation feature allows for comparisons at a particular point in time between each of the graphs and individual log entries.

Trace View

Version 8.0 enhancements have integrated the previously separate Tracer utility into the Buffer Analyzer application. The Trace view provides details of the buffer movements for in-depth analysis of the results. Trace entries are included in the Synchronisation feature for ease of diagnosis.

Buffer Model Results (BMR files)

The analysis results will be stored in a .bmr file to save having to re-analyse the same file. Results files may be opened directly in the Buffer Analyser, whereby logs, graphs and Trace contents (max 7000 entries) are re-populated. They are far smaller than the original TS files and thus useful to add as email attachments.

Contact Tektronix:

ASEAN / Australasia (65) 6356 3900
Austria +41 52 675 3777
Balkan, Israel, South Africa and other ISE Countries +41 52 675 3777
Belgium 07 81 60166
Brazil & South America (11) 40669400
Canada 1 (800) 661-5625
Central East Europe, Ukraine and the Baltics +41 52 675 3777
Central Europe & Greece +41 52 675 3777
Denmark +45 80 88 1401
Finland +41 52 675 3777
France +33 (0) 1 69 86 81 81
Germany +49 (221) 94 77 400
Hong Kong (852) 2585-6688
India (91) 80-22275577
Italy +39 (02) 25086 1
Japan 81 (3) 6714-3010
Luxembourg +44 (0) 1344 392400
Mexico, Central America & Caribbean 52 (55) 5424700
Middle East, Asia and North Africa +41 52 675 3777
The Netherlands 090 02 021797
Norway 800 16098
People's Republic of China 86 (10) 6235 1230
Poland +41 52 675 3777
Portugal 80 08 12370
Republic of Korea 82 (2) 528-5299
Russia & CIS +7 (495) 7484900
South Africa +27 11 254 8360
Spain (+34) 901 988 054
Sweden 020 08 80371
Switzerland +41 52 675 3777
Taiwan 886 (2) 2722-9622
United Kingdom & Eire +44 (0) 1344 392400
USA 1 (800) 426-2200

For other areas contact Tektronix, Inc. at: 1 (503) 627-7111

Updated 15 September 2006

For Further Information

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com



Copyright © 2007, Tektronix, Inc. All rights reserved. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks of Tektronix, Inc. All other trade names referenced are the service marks, trademarks or registered trademarks of their respective companies.

3/07 EAWOW

2AW-20731-0

Tektronix
Enabling Innovation

