

Audio Elementary Stream Analyzer

Agilent Technologies MPEGscope Test Systems

E6309A



***Comprehensive R&D Test Solution
for Compressed Digital Audio***

Key Product Features

- Analysis of MPEG, AAC and Dolby® AC-3 audio streams
- Syntax and semantic protocol analysis
- Complete audio decode and playback



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Applications

- Encoder/decoder development
- Compression algorithm optimization
- Interoperability troubleshooting
- DVB, ATSC, and ISDB system integration

Introduction

Although digital audio is often overlooked, it is a vital component of any digital broadcast system that greatly enhances the viewing and listening experience. Digital audio compression algorithms and protocols are complex and require in-depth analysis tools to debug and test performance. Agilent Technologies has developed a convenient test solution for R&D and system integration for compressed digital audio.

The Agilent E6309A Audio Elementary Stream Analyzer is a software package that runs on the award-winning MPEGscope Test System. It extends the capabilities of this powerful instrument by providing in-depth detailed analysis of the audio elementary stream including protocol decode and display, performance parameter graphing and audio output. This unique package combines analysis of MPEG-1 Layer 2, MPEG-2 Layer 2, MPEG-2 AAC, and Dolby Digital® AC-3 audio into one software package.

Engineers can use the MPEGscope to capture a transport stream, then demultiplex an audio elementary stream. With the Audio ES Analyzer, engineers can then view and debug the compressed audio data. Applications include optimization of audio encoders and debugging of audio-related problems in digital TV systems.

Key Product Features

Supported Formats

- MPEG-1 Layer II
- MPEG-2 Layer II
- MPEG-2 AAC (ADTS, LC)
- Dolby Digital® AC-3
- Multi-channel (5.1 channels)
- Multilingual

Full protocol decode

- Syntactic analysis
- Semantic analysis
- CRC error checking

View detailed information

- Frame headers
- Multi-channel extension
- Encoding information

Graph audio data

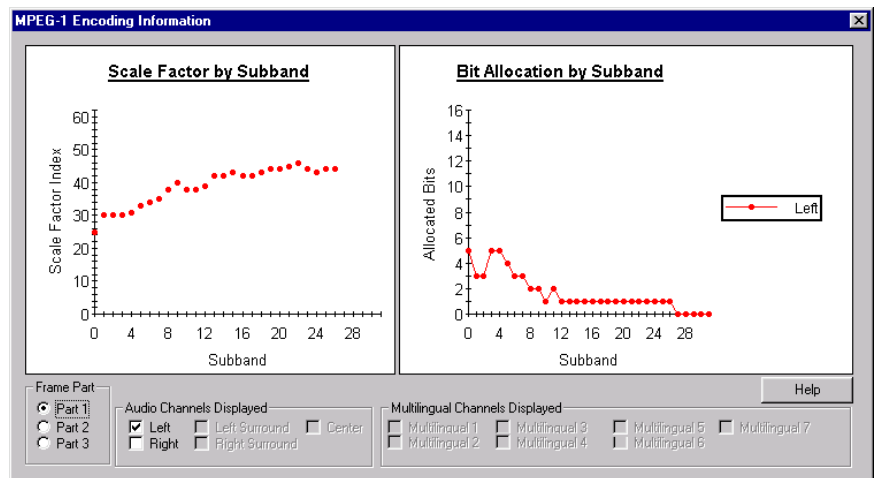
- Scale Factors versus Subband
- Bit Allocation versus Subband
- PCM output waveform

Audio decode

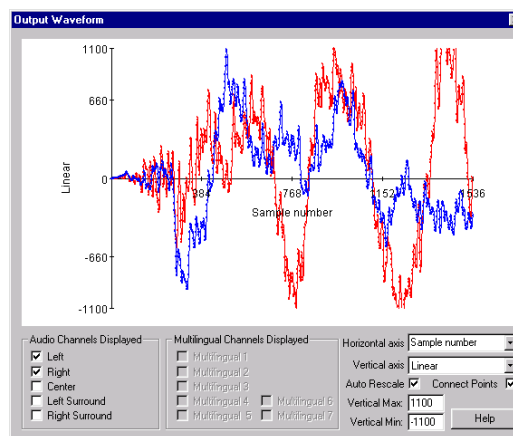
- Built-in MPEG audio decoder
- Built-in AC-3 decoder certified by Dolby® Laboratories
- Playout audio to headphones*
- Decode and save to PCM or WAV file

* Audio playout not available on portable MPEGscope platforms (E6300A/E6302A)

The Audio Elementary Stream Analyzer also displays and logs comprehensive error and warning messages and offers on-line help.



Scale factor and bit allocation are displayed by sub-band for MPEG-1 layer 2 and MPEG-2 layer 2 audio bitstreams.



The output audio waveform is plotted for each channel against sample number or time.

Applicable Standards

- ISO/IEC 13818-1: MPEG-2 Transport Stream
- ISO/IEC 13818-3: MPEG-2 Audio
- ISO/IEC 13818-7: MPEG-2 Advanced Audio
- ISO/IEC 11172-3: MPEG-1 Audio
- ATSC Standard A/52 - Digital Audio Compression (AC-3)
- ARIB STD-B20 Part 2

Related Products

- E6277C MPEGscope Plus
- E6300A MPEGscope Portable
- E6301A MPEGscope Lite
- E6302A MPEGscope Portable Lite
- E6310A Video Elementary Stream Analyzer

Warranty & Support Options

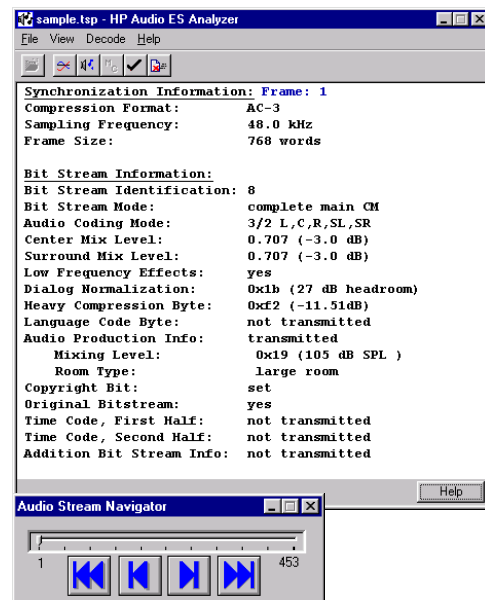
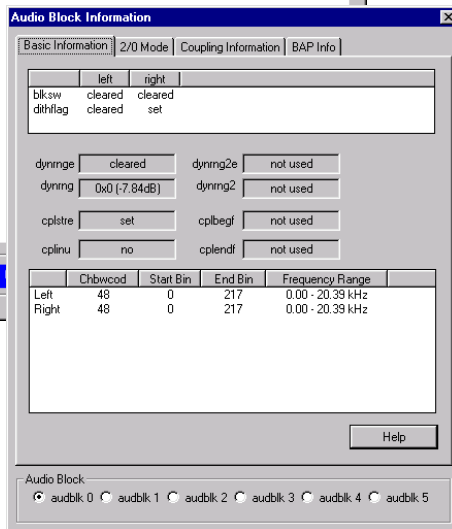
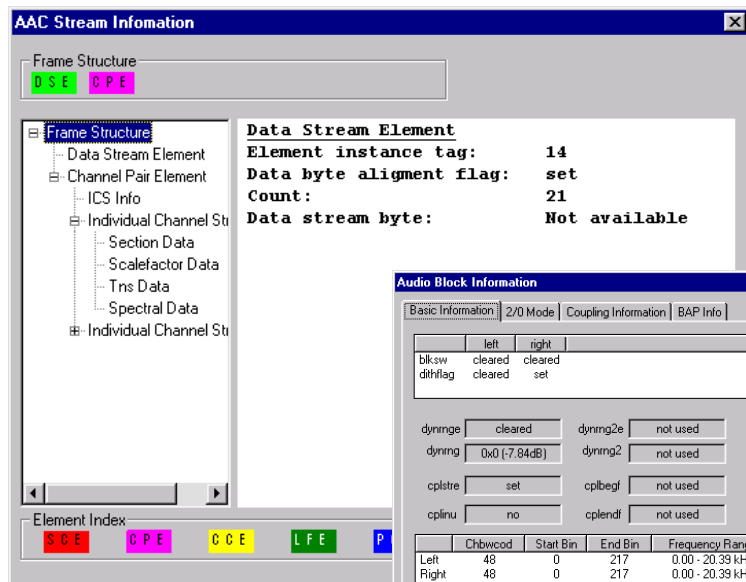
Agilent Technologies MPEGscope software products are supplied on CD-ROM. The warranty covers physical defects in the media, and defective media is replaced at no charge during the warranty period.

All MPEGscope hardware components are warranted for a period of 3 years. A free option is available which converts the standard 3-year return to Agilent warranty to 1 year on-site warranty (Option W01). Products must be returned to an authorized Agilent service center for service.

If you should have an out-of-warranty test system, you can arrange for service simply by contacting your local Agilent sales office.

Acronyms

AAC	Advanced Audio Coding
AC-3	Audio Coding - 3rd Generation
ADTS	Audio Data Transport Stream
ES	Elementary Stream
LC	Low Complexity
MPEG	Moving Picture Experts Group
PCM	Pulse Code Modulation



Header information for all formats is displayed in an easy-to-read format with syntactical and semantic errors clearly highlighted.

Detailed block information is provided for both AC-3 and AAC audio formats



Agilent MPEGscope Test System

The MPEGscope family of digital TV test products provide a complete spectrum of stream-capture, generation and in-depth analysis tools for MPEG-2, DVB, ISDB and ATSC standards. Agilent's tools cover the entire MPEG-2 protocol stack - from deep macroblock analysis to display, error-checking and editing of the DVB, ATSC and ISDB tables.

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