

## Products and Services

## Product Overview

**OPERA**

- > Voice Quality Testing
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- > OPERA™ Control Center Software
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**OPERA™**  
**Voice/Audio**  
**Quality Analyzer -**  
 The Objective  
 Perceptual Signal  
 Quality Analyzer  
 setting the Standards.



**PRODUCT**  
**OVERVIEW**

The OPERA™ Voice/Audio Quality Analyzer represents the latest developments to objectively evaluate and assure the quality of compressed voice and wide-band audio signals, based on modeling the human ear. With OPERA you can achieve a comprehensive analysis of the end-to-end quality of today's and next generation networks, such as VoIP, VoDSL, VoATM, ISDN, GSM, POTS, from the caller to the callee. Also, you can test the audio quality of compression formats such as MP3, AAC, AC3, Microsoft Windows Media, from the studio source to the receiver, or from the server to the client.

**> Comprehensive Scalability**

For the test engineer, one of the issues is how to apply a computer model of the human ear to a test circuit, or to a live network environment. For this reason, OPTICOM developed OPERA as an open, easy to configure hardware platform that can process perceptual models, which are implemented just by software. The basis of the OPERA system is a portable 'lunch box' type of PC host system. Four slots can take various kinds of interfaces. Alternatively, OPERA is now also available in a rack-mountable form factor. For R&D and lab applications, a cost effective software-only version with reduced functionality is offered, as well.

**> OPERA Form Factors:**

- **OPERA™ Portable Analyzer** ('Lunch-box') stand-alone;
- **OPERA™ 19" Server**, stand-alone and server
- **OPERA™ Distributed Network Test System**, incl. 19" Server, and/or Portables, automated QoS surveillance,
- **OPERA™ Software Suite** (file-based analysis, only)

**> Key Functionality, Voice Quality Testing**

- **PESQ**, perceptual evaluation of speech quality according to ITU-T rec. P.862 [2001]. Combines PSQM with PAMS, optimized for VoIP and hybrid end-to-end applications
- **PSQM**, perceptual speech quality measure according to ITU-T rec. P.861 [1996]
- **PSQM+**, advanced perceptual speech quality measure according to ITU-T COM 12-20 [1998]
- **PSQM/IP**, perceptual speech quality measure according to ITU-T rec. P.861 [1996], incl. advanced delay compensation for end-to-end measurements,

developed by OPTICOM

### > Key Functionality, Audio Quality Testing

### > Common Functionality

- **Echo measurement** based on real speech, Echo Return Loss ERLmom, ERLpeak, ERL vs. delay
- **PEAQ**, perceptual evaluation of audio quality according to ITU-R rec. BS.1387 [1999], Basic and Advanced Model
- **Most flexibly configurable unified hardware test platform for perceptual voice and audio quality measurements on the market**
- **On-line real-time acquisition and analysis capability for voice and audio quality testing (hardware only)**
- **Advanced delay compensation for end-to-end measurements, suitable for constant and variable delays (VoIP)**
- **User friendly graphical Windows interface for interactive operation, extensive graphical diagrams and output representations available,**
- **Comprehensive scripting functionality**
- **User friendly graphical 'control center' user interface for automated use and surveillance of QoS**

### > Interfaces for Telecom Applications

- **Four port analog POTS** interface (standard);
- **Dual port E1/T1 Trunk** interface option; software configurable, 120 Ohm RJ48C;
- **Quad port E1/T1 Trunk** interface option; software configurable, 120 Ohm RJ48C; (available on request)
- **2x 24 bit analog/digital audio I/O** interface option for multimedia terminal testing (e.g. PC-to-phone)
- **OPERA™ multimedia adapter set**, (e.g. for PC-to-phone, multimedia terminal testing)
  - incl. stereo XLR(m)-to-jack(3,5mm), stereo XLR(f)-to-jack(3,5mm)
  - incl. 2x XLR(m)-to-Cinch, 2x XLR(f)-to-Cinch
- **OPERA™ fixed and mobile phone adapter box** [Note: 2x 24 bit analog/digital audio I/O required]

### > Interfaces for Audio Applications

- **2x Stereo 24 bit analog/digital audio I/O** interface (standard), sym. XLR, AES/EBU
- **OPERA™ multimedia adapter set**, (e.g. for PC-to-phone, multimedia terminal testing)
  - incl. stereo XLR(m)-to-jack(3,5mm), stereo XLR(f)-to-jack(3,5mm)
  - incl. 2x XLR(m)-to-Cinch, 2x XLR(f)-to-Cinch

### > Download more detailed Technical Specifications

- > Download **OPERA™ Analyzer – Technical Specifications** [[as PDF / 50 kb](#)]
- > Download **OPERA™ Control Center – Technical Specifications** [[as PDF / 750 kb](#)]
- > Download **OPERA™ Software Suite – Technical Specifications** [[as PDF/ 40 kb](#)]
- > Download **OPERA data sheet** [[as PDF/ 823 kb](#)]
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