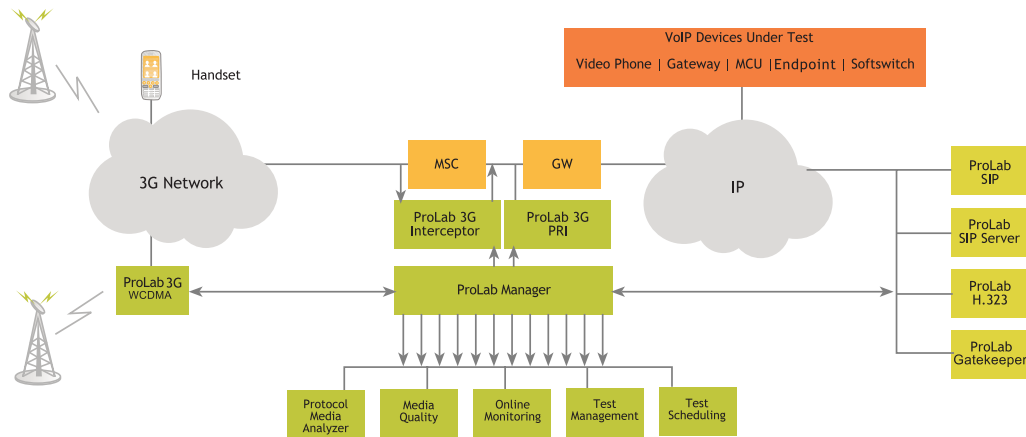


ProLab™ 3G-324M Test Solution



RADVISION's ProLab 3G-324M is part of RADVISION's ProLab Test Management Suite, providing both 3G-324M and SIP testing in a single, easy-to-use product. ProLab 3G-324M is designed to play a critical and vital role in the product development cycle. With hundreds of built-in plug-and-play scripts, test case media files, full 3G-324M simulation testing, and online analysis, ProLab 3G-324M provides a complete testing platform for performing exhaustive testing prior to deployment. The ProLab 3G-324M test solution was developed based on the expertise and know-how acquired developing RADVISION's award-winning, complete suite of protocol toolkits. In keeping with RADVISION's commitment to industry leadership, ProLab 3G-324M is fully compliant with the latest industry standards.



An Automated Testing and Validation Solution

For 3G Handset Developers and Manufacturers

ProLab 3G-324M offers a complete unit and feature testing system for developers of 3G handsets, terminal applications and mobile devices.

For 3G Network Equipment Vendors and Service Providers

ProLab 3G-324M enables simulation of a vast range of real-life 3G network conditions, monitoring of network component performance and validation of 3G application quality. DUTs- gateways, video-on-demand, video mail, advanced multimedia advertising, and 3G-network validation.

ProLab 3G-324M Advantages

- Full 3G simulation including problem simulation
- High performance and scalability
- Test plan management
- Reduced testing time
- Cost-effective testing
- Hundreds of built-in scripts
- Built in media files from different vendors
- Multiple online media viewer
- Simultaneous protocol testing: 3G-324M, SIP, H.323

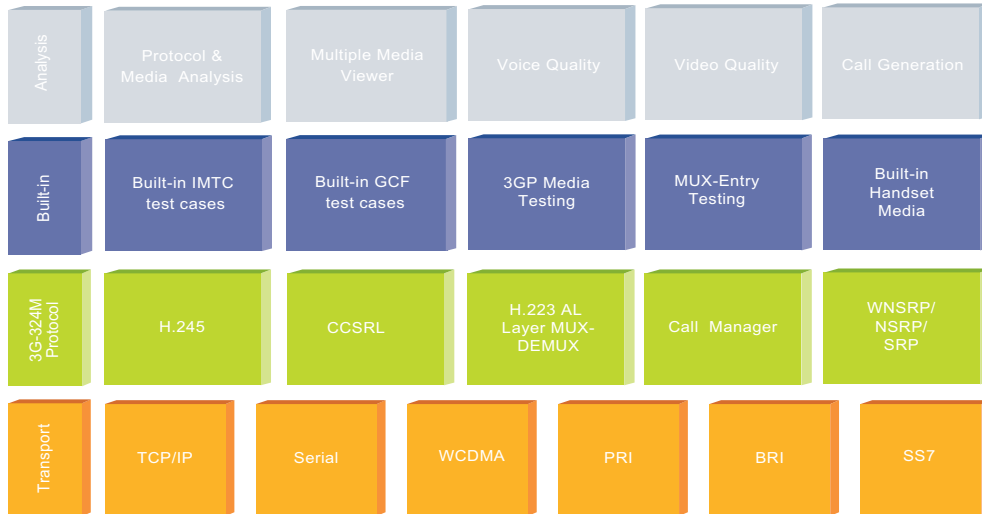
ProLab 3G-324M includes the following essential tests:

- Error (typical and atypical)
- Unit
- Functional
- Load and stress
- Regression
- Performance
- Feature verification
- Interoperability



ProLab 3G-324M Architecture

ProLab 3G-324M is a complete testing platform that includes multiple transport interfaces and the ability to conduct simultaneous multi-protocol testing. ProLab 3G-324M comes with an array of capabilities for setting up innumerable test cases, along with powerful tools to analyze these tests and monitor network and DUT performance.



ProLab 3G-324M Architecture Components

Transport

The Driver Interface enables integration with any bit-stream driver, such as a WCDMA, ISDN, Serial, and TCP/IP. The Driver Adaptor bridges the H.223 module and the specific driver.

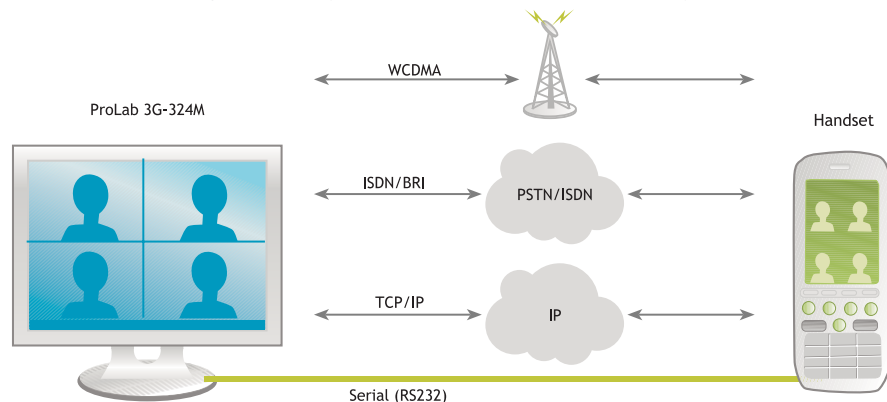
3G-324M

Call Manager: The Call Manager administers established calls on a wireless network. This module provides the necessary cohesion between the H.245 control object, the H.223 multiplexer/demultiplexer object, and the transport layer (driver adaptor).

H.223 Module: The H.223 Module is the multiplexer/demultiplexer module responsible for communication with bit-stream drivers, such as WCDMA, ISDN, Serial, and TCP/IP. Furthermore, the H.223 Module contains Adaptation Layers for handling error detection according to the traffic content of each logical channel such as voice, video, data, and call control. ProLab 3G-324M supports three types of Adaptation Layers: AL1, AL2, and AL3. ProLab 3G-324M supports the following H.223 annexes:

- Annex A - specifies the protocol that handles a light error prone channel of the mobile H.223 extensions
- Annex B - specifies the protocol that handles a medium error prone channel of the mobile H.223 extensions

H.245 Module: The H.245 Module performs call control, managing voice, video, and data channels between two or more session participants. ProLab 3G-324M comes installed with the most advanced and mature version of the H.245 module. This module also includes the CCSRL (Control Channel Segmentation and Reassembly) and NSRP (Numbered Simple Retransmission Protocol) services to enable a reliable H.245 channel over the multiplexer bit stream. RADVISION's H.245 is an award winning and industry-standard call control module used by hundreds of OEMs in H.323 products.



Built-in Scripts and Media

ProLab 3G-324M comes pre-packaged with an abundance of plug-and-play scripts and media files. This rich collection of ready-to-use prepared files represent a wealth of expertise and know-how for performing comprehensive and exhaustive test case scenarios. The built-in scripts perform a wide variety of test case simulations including H.245.

Built-in Media Handset: The built-in media simulates different media from various vendors, as well as different types of codecs. ProLab 3G-324M comes with a variety of voice and video codecs.

IMTC Test Cases: The IMTC (International Multimedia Teleconferencing Consortium) deals with standardized testing of communication protocols and has defined a specific set of test cases that must be passed by 3G-324M-compliant products and services. These tests are an important stepping stone in development, and currently represent the only standardized tests available today.

GCF Test Cases: The GCF (Global Certification Forum) has created another set of test cases, which is part of the GSM (Global System for Mobile Communications) standard. This world-renowned standard is particularly successful in terms of interoperability and roaming features, and has a history of providing comprehensive testing standards.

3GPP Media Tests: Six error pattern files are provided to facilitate the evaluation of error resilience in multiplex and video layers in IMT-2000 type networks. Similar to the current GSM and DECT patterns used by the Mobile Group, these new files can be used to evaluate the performance of multiplexing schemes, as well as error resilient video layers.

Quick test: Provides a wizard utility to quickly generate basic test scripts. With full plug-and-play capabilities, this utility enables registering and performing calls without the need to know or learn script language programming.

Advanced script language: ProLab 3G-324M comes with an advanced script language for developing complex and special case test scenarios with the ability to interact in sophisticated network topologies. Advanced scripting provides a vast range of testing capabilities, including opening and closing logical channels for media streams, as well as performing H.245 procedures which include capabilities exchange and master/slave determination.

Protocol and Media Analysis

Media analysis: ProLab 3G-324M enables advanced analysis of incoming and outgoing media streams, including frame distribution, frame loss, stuffing, bandwidth, PDU, CRC errors, and synchronization errors.

H.245 analysis: Provides the ability to view all the incoming and outgoing H.245 messages including ASN.1 PER encode buffers.

Call Performance and Setup Time Metrics: Monitors calls in progress (incoming and outgoing), and reviews test summary statistics. Supplies advanced setup time measurements (e.g. synchronized time, connected setup time, first media received, first media send time) and round-trip delay time measurements.

Multiple Media Viewer: Enables you to view incoming media streams, and to determine the range of the media stream that will be shown. Multiple incoming media can be viewed simultaneously.

Media and Network Errors Simulation: Simulates multiple errors, such as CRC errors, synchronization errors, audio frame loss, pre-configured and user defined bit errors, video frame loss, patterns and more.

Video Quality

The new perceptual Video Quality measurement uses different video metrics. It intrusively analyzes received video streams and perceptually scores relevant degradations on a 5-point MOS scale. Additional key performance indicators (KPIs), like PSNR and blockiness, are output to allow experts to make a more detailed analysis. Video Quality measurement can be used for SIP, H.323 and 3G-324M.

Voice Quality

The ProLab Media analyzer analyzes Voice Quality, measured by digitized voice lines. MOS is based on the subjective opinions of actual users rating the quality of the voice line on a scale from 1-5. The model provides measurements based on packet loss, jitter, and round trip delay.



ProLab 3G-324M Interceptor

The new ProLab 3G-324M Interceptor provides troubleshooting, protocol analysis, and video telephony call monitoring, allowing you to trace a call over the 3G-324M protocol and identify the source of 3G-324M problems. ProLab 3G-324M applications can be connected to ISDN/BRI, ISDN/PRI or WCDMA and numerous calls can be analyzed simultaneously. The ProLab 3G-324M Interceptor works in passive mode, and does not use the 3G-324M state machine to process calls.

ISDN/BRI mode:

WCDMA Interception with BRI. ProLab can intercept a call from BRI to BRI or from BRI to WCDMA.

ISDN/PRI mode:

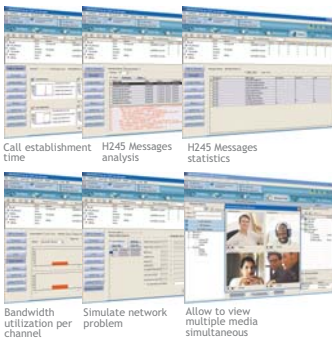
ProLab can intercept a call using a full PRI Interface or fractional PRI interface.

WCDMA mode:

WCDMA Interception using two WCDMA interfaces.

Standards Supported

- 3GPP 3G-324M recommendations
- 3GPP TS 26.110
- 3GPP TS 26.111
- 3GPP TS 27.007
- 3GPP TR 26.911 ITU-T H.324
- ITU-T H.324 Annex A
- ITU-T H.324 Annex C - Mobile Requirements
- ITU-T H.245 Version 11 - Advanced Call Control
- ITU-T H.223
- ITU-T H.223 Annex A - Error handling level 1
- ITU-T H.223 Annex B - Error handling level 2



About RADVISION

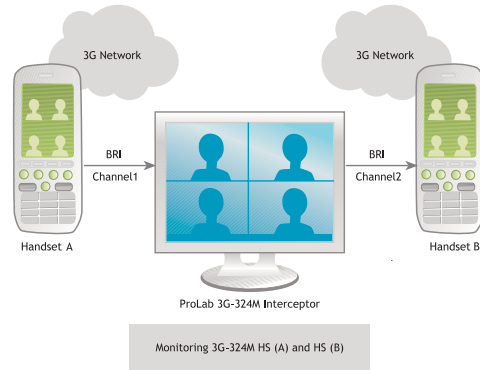
RADVISION (NASDAQ: RVSN) is the industry's leading provider of high quality, scalable and easy-to-use products and technologies for videoconferencing, video telephony, and the development of converged voice, video and data over IP and 3G networks. For more information please visit our website at www.radvision.com.

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ProLab 3G-324M Packaging

ProLab 3G-324M is available as software only or as a complete hardware-software package.

Software only

ProLab 3G-324M software is installed on customer-supplied hardware.

Hardware-Software package

An integrated hardware and software system including:

- Portable chassis
- 2.0Ghz Intel Pentium 4 CPU
- 14.1" TFT LCD display (1024x768)
- 512MB RAM
- Multi-speed CD-ROM drive
- 1.44MB 3.5" floppy disk drive
- 4 x PCI slots free
- 2 Type II or 1 Type III cards
- 2 Serial ports
- 2 USB ports
- 10/100 Base-T Ethernet
- 300W switching power supply

Transport interfaces

- ISDN/BRI
- ISDN/PRI
- WCDMA
- TCP/IP
- Serial
- SS7
- QUAD PRI