

# QA-604 QualityAssurer

NEXT-GENERATION NETWORK TEST PLATFORM



Easy to use, high performance and future-proof platform for today's VoIP and IMS network testing and tomorrow's next-generation technology and applications

## KEY FEATURES

Large scale emulation of VoIP and IMS subscribers, network elements (e.g., home subscriber server, or HSS) and network clouds

- ▶ Over two million emulated endpoints per platform

Unique and purpose-built test solution for VoIP and IMS

Hardware-based RTP and SRTP generation and analysis

- ▶ 128 000 RTP/SRTP streams per platform with QoS, MOS, perceptual evaluation of speech quality (PESQ) and delay factor (DF) analysis
- ▶ Comprehensive codec support: AMR, ILBC, G.711, G.729, G.721, G.722, G.726, G.723, G.728, EVRC, EVRC-B, GSM-EFR, GSM-FR, GSM-HR, H.263, H.264

Hardware-based time stamping for signaling packets and RTP/SRTP

Comprehensive security testing: TLS, IPSec, IKE and SRTP

Complete lifecycle testing—feature, load, interoperability and regression

## THE INDUSTRY'S MOST POWERFUL AND FLEXIBLE PLATFORM

EXFO's QualityAssurer QA-604 is the latest, most powerful compact test platform for today's voice-over-Internet protocol (VoIP) and Internet protocol multimedia subsystem (IMS) network testing and tomorrow's next-generation technology and applications. This carrier-class purpose-built platform, which can be rack-mounted or used as a desktop, provides unmatched scalability and performance, allowing customers to leverage the strengths of a high performance platform at a fraction of the cost of alternative off-the-shelf server solutions.

Building on EXFO's ability to combine high quality, capacity, scalability and robustness, the QualityAssurer QA-604 offers state-of-the-art technology at a lower cost and in a smaller form factor. The QualityAssurer QA-604 tests the entire lifecycle, thanks to its feature, load, regression, interoperability and scalability testing capabilities, making it an ideal solution for network equipment manufacturers' development, test and advanced labs as well as network service providers' quality assurance and pre-deployment labs.

The QualityAssurer QA-604 is a four-slot scalable platform that can support multiple users and applications simultaneously. Used with the SCM-GbE Interface or with the MCM-GbE Interface series, the platform can emulate millions of VoIP and IMS subscribers in addition to emulate network elements such as HSS, Proxy servers, application server and network clouds consisting of two or more VoIP and IMS network elements.

Combined with the MCM-GbE Interface series, the QualityAssurer QA-604 delivers unmatched media testing, providing real-time generation and analysis of line-rate real-time transport protocol (RTP) and secure real-time transport protocol (SRTP) traffic using a comprehensive list of codecs. Each media RTP or SRTP stream can be analyzed for quality of service (QoS) and mean opinion score (MOS) for the entire duration of the call. It offers testing of elements such as the session border controller (SBC) and the border gateway function (BGF) for theft of service (ToS), rogue media and denial of service (DoS) attacks. This interface also supports high-performance security protocols such as transport layer security (TLS), Internet protocol security (IPSec), SRTP and SRTCP and Internet key exchange (IKE), which are integral components of VoIP and IMS networks.

Moreover, the platform provides the capacity to initiate and terminate thousands of calls and registrations per second and can be cost-effectively expanded for increased capacity and performance testing with a daisy chain linking up to two QualityAssurer QA-604, leveraging the same licensed options across both platforms. By investing in a QualityAssurer QA-604, you are investing in the industry's most powerful, yet flexible and very cost-effective test solution.

### Contributes to OPEX reduction

- › Simultaneous multi-user, multiprotocol and multi-application
- › Hot-swappable hardware modules that can be used for different test applications
- › Single software license per option for entire platform and leveraging of the same licensed option by several test beds
- › Daisy chain linking up to two platforms, leveraging the same licensed options across both platforms
- › Remote control using standard applications such as VNC and Exceed

## BEST-IN-CLASS AND UNPRECEDENTED EASE-OF-USE

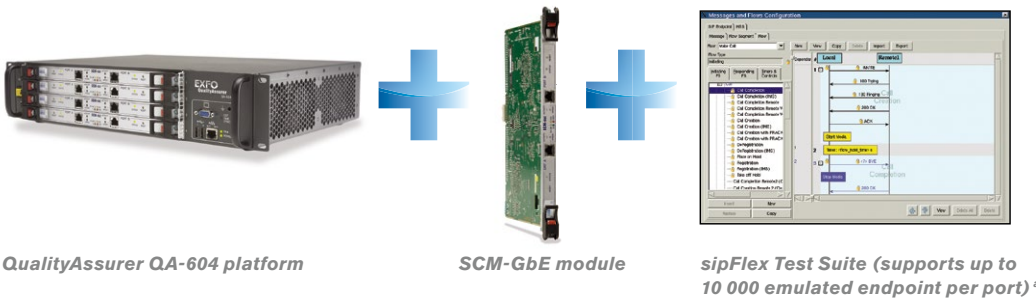
Combined with the SCM-GbE, the MCM-GbE and EXFO's endpoint emulation tool (sipFlex Test Suite) and HSS emulator (hssFlex Test Suite), the QualityAssurer QA-604 provides an easy-to-use, yet powerful test bed. This solution surrounds the IMS core to perform comprehensive device and end-to-end testing, and characterizes the full lifecycle—all in a single application.

Using the flexible message/signaling flow editor and the various pre-built flows (IMS, Class V, Floods, etc.), network equipment manufacturers and network service providers can simulate a mix of traffic toward the IMS core to test IMS networks against real-world scenarios prior to their deployment; thus preventing any unpleasant surprise.

Choose from one of the following entry-level packages:

### SIP Signaling Testing Package (TKS-SIP)

This package is aimed at customers that need SIP signaling testing capabilities only. It includes:



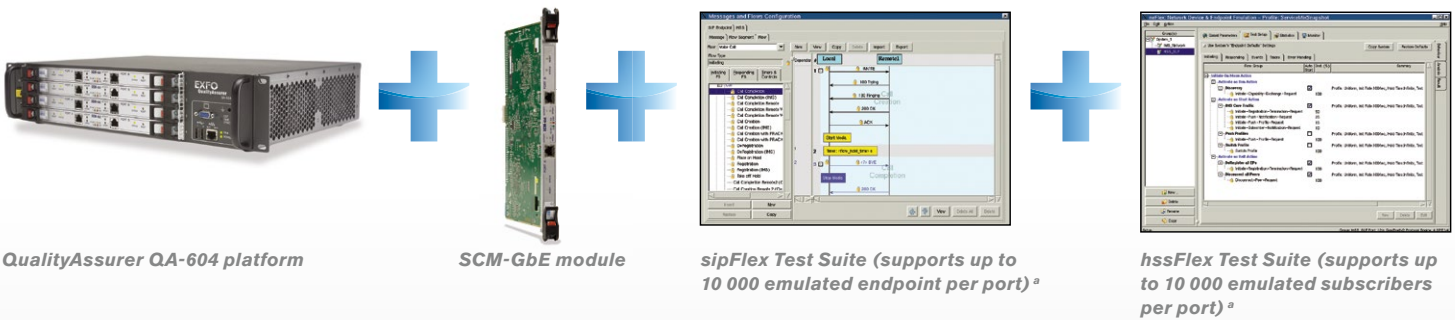
QualityAssurer QA-604 platform

SCM-GbE module

sipFlex Test Suite (supports up to 10 000 emulated endpoint per port)<sup>a</sup>

### IMS Testing Package (TKS-IMS)

This package is ideal for customers wishing to test the IMS core either by surrounding it with endpoints and HSS or from the Gm, Cx, Dx, Sh and DH interfaces. It includes:



QualityAssurer QA-604 platform

SCM-GbE module

sipFlex Test Suite (supports up to 10 000 emulated endpoint per port)<sup>a</sup>

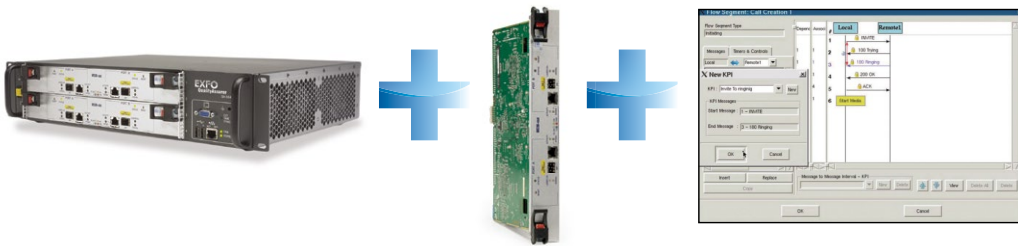
hssFlex Test Suite (supports up to 10 000 emulated subscribers per port)<sup>a</sup>

**Note**

a. The sipFlex and hssFlex test suites can be upgraded to 2 048 000 subscribers per platform by adding hardware modules and upgrading software.

## SIP Signaling and Media Lite Package (TKS-SIP-Media-Lite)

This package is aimed at customers that need low-scale SIP signaling and media testing capabilities. It includes:



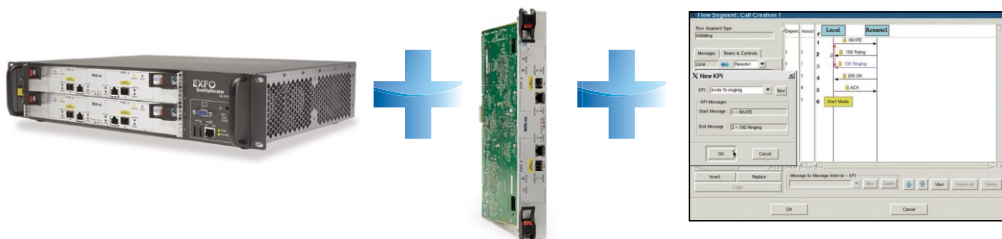
*QualityAssurer QA-604 platform*

*MCM-GbE-Lite module*

*sipFlex Test Suite (supports 10 000 emulated endpoint and 2500 RTP streams per port)<sup>a</sup>*

## SIP Signaling and Media Medium Package (TKS-SIP-Media-Medium)

This package is aimed at customers that need medium SIP signaling and media testing capabilities. It includes:



*QualityAssurer QA-604 platform*

*MCM-GbE-Lite module*

*sipFlex Test Suite (supports 32 000 emulated endpoint and 5000 RTP streams per port)<sup>a</sup>*

### Note

a. The sipFlex Test Suite can be upgraded to support 2 048 000 emulated endpoints or 128 000 RTP streams per platform by changing hardware modules and upgrading software.

## SPECIFICATIONS

Platform	Four-slot rack-mounted or table desktop
Hot-swappable hardware modules	Up to four SCM-GbE interfaces or two MCM-GbE (or MCM-GbE-Lite) interfaces <sup>a</sup>
Performance and capacity per platform	2 048 000 emulated SIP endpoints (per fully loaded four-slot platform with sipFlex) 2 048 000 subscribers support (per fully loaded four-slot platform with hssFlex) 14 400 SIP registrations per second 3400 SIP calls per second 34 400 SIP message floods per second 128 000 RTP and 128 000 RTCP streams (per fully loaded four-slot platform with MCM-GbE)
Reset	Per platform, per interface or per port (hardware or software)
Interfaces	USB (2), VGA, Ethernet (management)
Operating system	Solaris
Processor and memories	Intel Core 2 Duo, 2 GHz, 2 GB RAM (min), 120 GB hard disk (min)
Remote control	Standard Windows applications such as VNC and Exceed
Size (H x W x D)	101 mm x 483 mm x 362 mm (4 in x 19 in x 14 ¼ in)
Weight	5.5 kg (12.1 lb)
Power supply	100 to 240 VAC, 50/60 Hz

### Note

a. The QualityAssurer QA-604 can house up to four SCM-GbE modules or up to two MCM-GbE (or MCM-GbE-Lite) modules; each unused slot must be populated by a QA-FP faceplate.

## ORDERING INFORMATION

For ordering information, please contact [isales@EXFO.com](mailto:isales@EXFO.com)

## Complementary Products

### SCM Gigabit Ethernet Interface

The Signaling Centric Module Gigabit Ethernet (SCM-GbE) module is designed to facilitate high-performance signaling test capabilities. It is equipped with processor-accelerated support for security protocols (TLS, IPSec and IKE) and its custom-designed FPGA enables accurate time-stamping of signaling messages with a resolution of 10 nanoseconds, allowing network performance characterization under various traffic loads.

### MCM Gigabit Ethernet Interface

The Media Centric Module Gigabit Ethernet (MCM-GbE) module is designed to facilitate high-performance signaling and media test capabilities. In addition to providing all the powerful features of the SCM-GbE, the MCM-GbE generates and analyzes media at full line rate supporting up to 32 000 media streams per port (64 000 per module).

### MCM Gigabit Ethernet Interface Lite

The Media Centric Module Gigabit Ethernet Lite (MCM-GbE-Lite) module offers the same signaling and media testing capability of the MCM-GbE. It supports a maximum of 5000 media streams per port (10 000 per module).

### sipFlex Test Suite

This SIP endpoint and network cloud emulation tool simulates subscribers' behavior as they interact with the network. It also tests the device under test security capabilities such as protection against theft of service, registration floods, rogue media and media pinhole hijacking.

### hssFlex Test Suite

This HSS emulator designed with built-in test functionality, provides a comprehensive IMS test bed, allowing NEMs and NSPs to perform comprehensive device and end-to-end testing using a combination of the industry-leading HSS test emulator and IMS subscribers (sipFlex) in a single test application. It also allows characterizing device and network response latency measurement under various network load conditions.

### h323Flex Test Suite

The h323Flex Test Suite is designed to assist NEMs and NSPs to perform H.323 to SIP interwork testing, using real-world traffic load in lab environments. This easy-to-use application provides comprehensive capabilities, covering the entire H.323 network at the various stages of development and deployment.

### IMS Border Gateway Test Suite

The IMS Border Gateway Test Suite is purposely built to integrate the subscribers and the controller into a single flexible but easy-to-use GUI-driven test bed. It enables test engineers to easily perform feature, negative, load, regression, interoperability and scalability testing of IMS border gateway functions.

### proxyFlex Test Suite

The proxyFlex test suite emulates the IMS P-CSCF, I-CSCF and the S-CSCF in a stateful manner, enabling NEMs and NSPs to perform comprehensive device and end-to-end testing of various IMS network components. For example, elements such as the HSS, AS and CSCF can be tested under real-life conditions by surrounding them with the rest of the network. The application supports various call flows for registration, call processing and session control to test any service deployed over an IMS core.

**EXFO Headquarters** > Tel.: +1 418 683-0211 | Toll-free: +1 800 663-3936 (USA and Canada) | Fax: +1 418 683-2170 | info@EXFO.com | [www.EXFO.com](http://www.EXFO.com)

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