

# MCM Gigabit Ethernet Interface Series



Designed to facilitate high-performance signaling and media testing of VoIP and IP multimedia subsystem network elements

## KEY FEATURES

64 000 hardware-based RTP/SRTP and RTCP/SRTCP streams with simultaneous real-time path verification on all streams for audio, video and DTMF

64 000 simultaneous quality of service (QoS) measurement including mean opinion score (MOS), packet loss, delay and jitter

512 000 endpoints emulated per module

Thousands of registrations and floods per second

Hundreds of calls per second (with or without media)

Up to 128 000 secure simultaneous tunnels

Hundreds of tunnels setup and tear down per second

Multiple codec support such as 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

Accurate network delay, latency and session establishment time measurement

High-capacity secured connection supporting IPSec, TLS, IKE, IMS AKA, SRTP

Two models available, in standard or lite version

## DELIVERING QUALITY, FLEXIBILITY AND PERFORMANCE

The MCM Gigabit Ethernet Interface (MCM-GbE ) series is designed to facilitate high-performance signaling and media testing of VoIP and IP multimedia subsystem (IMS) network elements such as session border controllers (SBCs), security gateways, SIP proxy/registrar, IMS I/P/S-CSCFs, HSS, BGF and application servers such as Presence and IP Centrex.

Thanks to its versatile capabilities including functional, load/stress, regression, negative and denial of service (DoS) attack testing as well as its media generation and quality analysis capabilities, this dual Gigabit Ethernet series provides complete test coverage and delivers the renowned quality, flexibility and performance of EXFO's VoIP and IMS testing solutions.

### Unmatched Signaling and Media Capacity and Performance

With EXFO's QualityAssurer QA-604, the MCM-GbE series emulates millions of subscribers, generating real-world traffic toward VoIP and IMS networks (including network elements). Capacity and performance boundaries of IMS and VoIP networks (including network elements) can be characterized by generating thousands of registrations and calls per second and tens of thousands of denial of service (DoS) attacks per second.

When used with the high-performance and flexible SIP, H.323, IMS BGF and HSS test applications, the MCM-GbE series becomes an easy-to-use, all-in-one and powerful solution to perform comprehensive VoIP and IMS signaling and media testing. By generating SIP traffic with EXFO's sipFlex Test Suite on one port while emulating HSS with EXFO's hssFlex Test Suite on the other, the entire IMS network core can be tested and the complete signaling path of an IMS call can be characterized.

### Hardware-Based Media and Security Support with Real-Time Latency Measurements

This series is equipped with custom-designed FPGAs, enabling real-time analysis of every media RTP stream for QoS or MOS on each packet received for the entire duration of the call with a 10-nanosecond time-stamp resolution. By measuring the precise time difference between any two messages, key performance indicators (KPIs) gauging the network response latency and call session establishment time can precisely be assessed to characterize the network's performance under various conditions and traffic loads.

High-performance security protocols such as transport layer security (TLS), Internet protocol security (IPSec), secure real-time transport protocol (SRTP) and Internet key exchange (IKE) are integral components of VoIP and IMS networks, which are also supported. The ability to support large amount of such security connections is crucial to perform realistic IMS testing. Hardware-based security co-processor is used to provide the high performance and the capacity required to test security elements such as security gateways, SBCs and IMS P-CSCF. Furthermore, by emulating service theft, injecting rogue media or emulating DoS attack security capabilities of elements such as SBC and IMS BGF can be characterized.

Each port on the MCM-GbE can be controlled separately in a multi-user environment through EXFO's QualityAssurer QA-604 platform, yielding a granularity of one user per port. Each of its two ports is connected to a dedicated PowerPC processor that runs an optimized Linux operating system to provide extremely high processing capacity to each port.

## SPECIFICATIONS

<b>Test solutions</b>	SBC, security gateways, BGF, IMS I/P/C-CSCF, HSS, SIP proxy/registrar
Protocol supported	SIP, Diameter, Megaco/H.248, RTP/RTCP, SRTP/SRTCP, TLS, IPSec, IKEv1, IKEv2, IPv4, IPv6, TCP, UDP, SCTP, DHCP, DNS
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, DTMF
QoS, MOS, PESQ	Yes
SIP endpoints per port (per module)	256 000 (512 000)
SIP registration support per port (per module)	1800 (3600) per second
SIP calls per port (per module)	425 (850) attempts per second
SIP message flood per port (per module)	4300 (8600) attempts per second
HSS subscribers per port (per module)	256 000 (512 000)
BGF endpoints per port (per module)	32 000 (64 000)
H.323 endpoints per port (per module)	32 000 (64 000)
RTP/SRTP streams per port (per module)	Standard version: 32 000 (64 000) Lite version: 5000 (10 000)
Connection speed	Auto-negotiate 10/100/1000 Mbit/s
Number of ports	Two
Hot-swappable module	Yes
Central processing unit (CPU)	Two PowerPC
Status LEDs	Speed (no link, 10/100/1000 Mbit/s) Status Activity Signal Laser on
Reset button	Two (one per port)
Platforms supported	QualityAssurer QA-604 Next-Generation Network Test Platform
Connection interface	RJ-45 (electrical) or SFP (optical)
Available SFP transceiver modules	850 nm, 500 m 1310 nm, 4 km

## GENERAL SPECIFICATIONS

Platform	QualityAssurer QA-604 (Two-slot module)
Number of modules per platform (max.)	Two
Width	41 mm (1.6 in)
Length	320 mm (12 <sup>5</sup> / <sub>8</sub> in)
Weight	0.9 kg (2.1 lb)

## COMPATIBILITY

Model	Platform	Number of slots needed	Hot-swappable	Maximum number of media streams per module
MCM-GbE	QualityAssurer QA-604	2	Yes	64 000
MCM-GbE-Lite	QualityAssurer QA-604	2	Yes	10 000

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

## Complementary Products

### 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.

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