W²CM 10 Gigabit Ethernet Interface Series

W²CM-10GbE
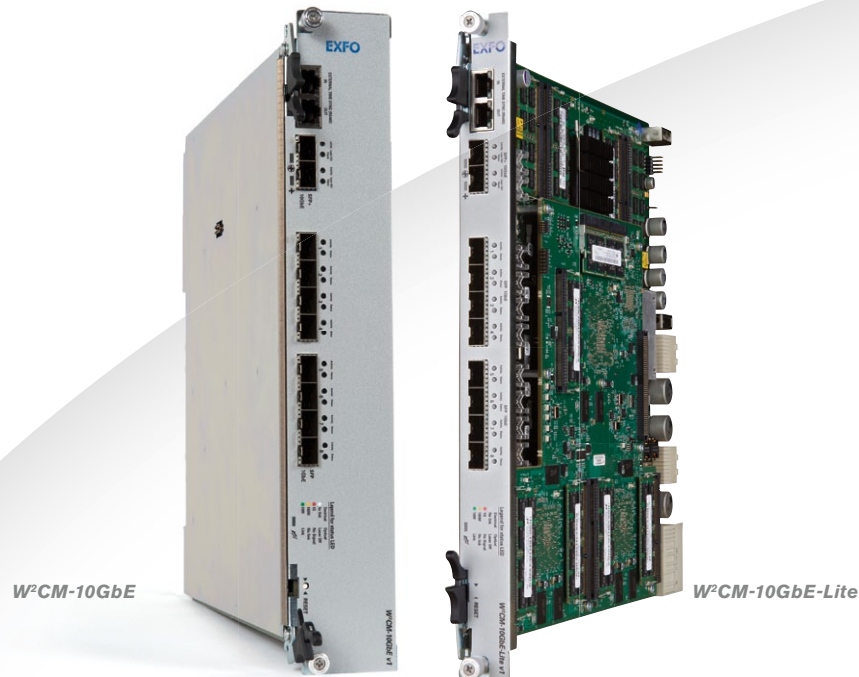
W²CM-10GbE-Lite

High-performance and high-capacity testing of control signaling and user plane for wireless (2G/3G/LTE), IMS and VoIP networks

KEY FEATURES

Emulate over two million LTE, IMS, VoIP, VoLTE subscribers

Real-time generation and analysis of two million sessions:

> HTTP, FTP, RTSP, SIP and any other stateful sessions using unique SmartReplay features

> Multiple bearers per UE, multiple flows per bearer

> Bearer QCI control and verification

> User-defined bearer profiles

High performance and capacity of signaling traffic across wireless and wireline protocols for realistic network testing

> 40 000 transactions per second

> Tens of thousands of registrations and calls per second

Real-time generation and analysis of 512 000 RTP and RTCP streams with simultaneous real-time path verification and QoS analysis—MOS, delay, jitter, loss—on every stream

Verification of key LTE EPC functions such as GBR, MBR, TFT processing

Accurate measurement of network performance such as delay, session establishment time, throughput, packet loss and jitter

User-definable LTE-specific statistics filters—by QCI, APNs

Hardware-based KPIs providing accurate response times at high performance and capacity

> Leverage predefined KPIs

> Define custom KPIs for any user-plane session

Eight 1 GbE ports and two 10 GbE ports

> Use 1 GbE and 10 GbE ports simultaneously

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REALISTIC WIRELESS AND WIRELINE CONVERGED TESTING

The W²CM-10GbE is designed to meet the challenging needs of testing fixed-mobile converged networks and services like wireless (2G/3G/LTE), IMS, VoLTE and VoIP. It is specially designed for signaling and user-plane testing of network elements such as the P-GW, S-GW, eNodeB, SBC, CSCFs, BGF, HSS and IMS application servers.

It utilizes advanced CPU technology to deliver the high performance required for testing large-scale networks, and it offers state-of-the-art FPGA technology for generating and analyzing, at line rate, user-plane sessions such as voice, video and data.

Unmatched Signaling and Media Capacity and Performance

With EXFO's QualityAssurer, the W²CM-10GbE module emulates tens of millions of subscribers, generating real-world traffic toward LTE, IMS and VoIP networks. It emulates subscribers initiating voice/video calls, browsing websites, downloading files, checking e-mails, as well as streaming audio and video content. Using custom-designed FPGAs, the W²CM-10GbE module provides accurate time-based statistics, with a 10 ns time-stamp resolution, to gauge the quality of service provided to subscribers.

The hardware-based generation and analysis engine can generate and analyze tens of thousands of transactions per second, allowing small to very-large-scale network-deployment testing. By emulating network elements such as the eNodeB, P-GW, S-GW, MME and CSCFs, W²CM-10GbE can wrap around any network element or network segment to test different network scenarios. It can also be used in the optimization of various deployment scenarios and architectures (e.g., roaming, fixed, collapsed and decomposed architecture), allowing network service providers (NSPs) and network equipment manufacturers (NEMs) to design optimal networks that exceed their customers' expectations.

Purpose-Built for Testing LTE, IMS and VoIP Networks

High data rates and quality of service (QoS) are some of the key attributes of the 3GPP specifications for LTE. Dedicated bearers, guaranteed bit rates (GBRs), maximum bit rates (MBRs) and traffic flow templates (TFTs) are some of the parameters and features that LTE networks need to support in order to ensure that the highest QoS is delivered by the network.

QoS is also a major concern in IMS networks, especially when supporting VoLTE services. In the VoLTE deployment scenario, both the IMS and LTE networks must provide the highest levels of QoS in order to guarantee acceptable levels of end-to-end QoS.

The W²CM-10GbE is purposely built to simulate real-world network traffic and characterize the QoS of both LTE and IMS networks under various traffic profiles. For example, the data-profiling feature enables users to specify traffic profiles consisting of the following characteristics: dedicated, default, GBR and non-GBR bearers, mix of data types (e.g., 40% video, 30% http and 30% audio) and the average number of bearers per UE.

This unique capability enables NSPs and NEMs to test their networks against real-world traffic patterns in a controlled environment.

SmartReplay Mechanism—Testing for Today's and Tomorrow's Services

LTE, IMS and VoIP networks will need to provide very-high-quality customer experience when delivering services such as voice, video, data, social media, presence and rich communication services (RCS).

In addition to supporting well-known services and protocols (e.g., SIP, HTTP, RTP, FTP, SMTP and RTSP), the W²CM-10GbE, with its SmartReplay technology, can generate and analyze many other applications in real-time.

The SmartReplay technology uses custom-designed FPGAs to guarantee line rate and real-time generation and analysis of stateful traffic across millions of subscribers. It provides a powerful, flexible, yet very easy-to-use GUI to facilitate the creation of new services or the modification of existing services.

In addition, users of the SmartReplay technology can easily, import, modify and regenerate any user-plane traffic.

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SPECIFICATIONS

Test solution	LTE eNodeB, P-GW, S-GW, MME SBC, security gateways, BGF, IMS I/P/C-CSCF, HSS, SIP proxy/registrar
Protocol supported	HTTP, SMTP,POP,RTSP, GTP-c, GTP-u, S1-AP, S1-MME, NAS, 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
SIP/LTE endpoints per module	2 million (W²CM-10GbE), 2 million (W²CM-10GbE-Lite)
Number of sessions per module	2 million (W²CM-10GbE), 2 million (W²CM-10GbE-Lite)
Throughput	20 Gbit/s (W²CM-10GbE), 10 Gbit/s (W²CM-10GbE-Lite)
Number of RTP streams per module	512 000 (W²CM-10GbE), 256 000 (W²CM-10GbE-Lite)
Connection speed	Auto-negotiate 10/100/1000/10000 Mbit/s
Number of ports	8 x 1GbE and 2 x 10GbE
Hot-swappable modules	Yes
Hardware variance	W²CM-10GbE (2 slots module), W²CM-10GbE-Lite (1 slot module)
Platforms supported	QA-805 (2xW2CM-10GbE or 5xW2CM-10GbE-Lite) QA-813 (6xW2CM-10GbE or 13xW2CM-10GbE-Lite)
Available SFP transceiver module	1000Base-T SFP 850 nm, 500 m SFP 1310 nm, 10 km SFP 850 nm, 300 m SFP+ 1310 nm, 10 km SFP+

ORDERING INFORMATION

For ordering information, please contact **isales@EXFO.com**

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