

Brix 3000 Verifier

CONVERGED SERVICE ASSURANCE



- In-network service assurance verifier
- Measures real-time performance of IP and Ethernet services
- Delivers end-to-end service assurance testing
- Offers worldwide time synchronization options
- Features carrier-class design and NEBS Level 3 certification
- Provides operational simplicity for "lights-out" management
- Supports network-to-application layer testing

Versatile In-Network Performance Management

The Brix 3000 Verifier is an in-network service assurance device that measures the real-time performance of data transport, wireless backhaul, metro Ethernet, voice-over-Internet protocol (VoIP), mobile and video services. The superior performance of the Brix 3000 makes it ideally suited for deployment in a wide variety of service provider and enterprise locations, including metro hubs, regional head-ends, points of presence (PoPs), mobile switching centers and data centers.

Critical Component of End-to-End Service Testing

The Brix 3000 represents a critical component of EXFO Service Assurance's end-to-end service testing approach. It delivers both the all-important end-user experience (key performance and key quality indicators) along with the visibility and the detail network administrators need to easily troubleshoot performance problems and identify their root causes.

The Brix 3000 provides core-to-core, edge-to-core and edge-to-end-user testing. By deploying the Brix 3000 Verifier at key locations in the network core and edge, by leveraging industry standards and testing with the Brix 100M Verifiers deployed at customer premise locations, NOC personnel can effectively segment the network to gain the needed visibility into the enterprise, access, core and backhaul networks.

Patented Timing Accuracy for Real-Time Services

In addition to industry-leading active test scalability, the Brix 3000 features exceptionally accurate timing capabilities to support the sub-millisecond precision required for today's performance-sensitive services. All time measurements take advantage of the Brix 3000 Verifier's patented hardware packet timestamp engine, eliminating the variations caused by user or kernel-level software-based timing schemes. This combination provides the most accurate one-way measurements in the industry for IP services.

An optional GPS timing module or the use of industry standard CDMA or GPS time servers provide accurate, worldwide synchronization of Brix 3000 timestamps to microsecond precision for GPS and sub-100 microsecond precision with CDMA. This allows service providers to identify low latency intra-metro or regional issues and enforce extremely stringent service-level agreements (SLAs).

Carrier-Class Design for In-Network Deployment

The Brix 3000 Verifier is designed from the ground up as carrier-class equipment, offering features such as AC or redundant DC power options. Additionally, the Brix 3000 is network equipment building system (NEBS) level 3-compliant, meaning the platform has passed a series of independent and stringent environmental, safety, emissions, serviceability, reliability and quality tests, and is certified for deployment in carrier central offices.

To support the manageability needs of in-network locations, the Brix 3000 supports a complete command line interface, which is accessible over the network via SSH or telnet, or through the on-board serial console port. In addition, all Brix Verifiers are remotely managed through the Web-based user interface provided by the central site BrixWorx operational support system (OSS). Encrypted and secure administrative communication between the Verifier and server can also be off-loaded from the production network onto a management network through the dedicated 10/100/1000 Mbit/s Ethernet management ports.

Operational Simplicity

The Brix 3000 Verifier delivers the reliability and management features required of carrier environments, combined with the ease of complete "lights-out" operation. To install, simply plug in Ethernet cables for connectivity and connect the power source—the Verifier completes the rest. Upon power up the Brix 3000 performs system integrity checks, automatically discovers its BrixWorx server and then downloads all system configuration, test modules and test schedules over a secure, encrypted connection from the server.

Network-to-Application Layer Performance Management

The Brix 3000 Verifier supports the full suite of more than 100 active tests provided by the Brix System. These tests support a wide array of IP services, including VoIP, video, VPN, wireless and Web-based applications, plus network and infrastructure performance tests. The Brix 3000 calculates a deep set of performance statistics (such as one-way packet latency and jitter) by measuring application-specific transactions. The pro-active tests precisely simulate user-level transactions.

Specifications

Sample Supported Tests

- VoIP: H.323, MGCP, NCS, SCCP, SIP
- Video: H.323, RTP, RTSP
- VPN: Full-mesh availability and performance
- Network infrastructure: DHCP, DNS, SNMP
- Applications: HTTP, e-mail, FTP, NTP
- Carrier-Ethernet tests conforming to 802.1ag and Y.1731 standards
- Quality of service (QoS) and VLAN support
- One-way performance, path analysis

Indicators and Interfaces

- Two test ports:
 - 10/100/1000 Mbit/s copper or fiber SFP's
 - Auto-sensing, auto-negotiating
 - Hardware packet timestamp engine
 - Link and activity LEDs
- Two management ports:
 - 10/100/1000 Mbit/s copper
 - Auto-sensing, auto-negotiating
 - Link and activity LEDs
- Optional GPS timing module
- Console Port (EIA-232)
- AC or dual feed DC power
- System status LED (green/amber)

Physical

- Size (H x W x D): 4.4 cm x 43 cm x 48 cm (1 3/4 in x 17 in x 19 in)
- Weight: 8.2 kg (18 lb)
- 19-inch rackmount (front or slide rail mounted)

Power

- AC power: 100 to 240 VAC
 - 118 VAC at 2.3 A (271 W)
- DC power: -48 V dual feed
 - -48 VDC at 2 A (96 W)

Environmental

- Temperature
 - Operating: -5 °C to 55 °C (23 °F to 131 °F)
 - Storage: -40 °C to 70 °C (-104 °F to 158 °F)
- Relative humidity: 90 % non-condensing
- Operating altitude: 4 000 m at 28 °C (13 000 ft at 82 °F)

Regulatory

- **NEBS:** Level 3 certified (GR-63-CORE, GR-1089-CORE)
- **Emission Standards:** ICES-003, EMC Directive 89/336/EEC, EN 55022:1994 EN 61000-3-2, EN 61000-3-3, CFR 47/FCC Part 15 Sub. B. (Class A)
- **Immunity Standards:** EMC Directive 89/336/EEC, EN 55024, EN 61000-4-3:2002, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
- **Safety:** Investigation to the US, Canada and EU/EEA Bi-National Standard for Safety of Information Technology Equipment, including Electrical Business Equipment, CAN/CSA C22.2 No. 60950-5, UL 60950-1/EN 60950-1, IEC 60950-1
- **Certification Marks:** cULus, CE, EMC (Class A)

EXFO Service Assurance is a global provider of converged service assurance solutions that allow the world's largest service providers and enterprises to offer reliable and high-quality experiences in voice, video, data and mobile services to their customers, partners, and employees. The company brings a proven heritage of IP expertise unique to the service assurance marketplace, and collaborates closely with its customers and partners to assure the delivery of any IP-based service, over any network, to any endpoint.

EXFO Service Assurance's seamlessly integrated hardware and software products, collectively called the Brix System, are converged service assurance solutions that proactively monitor IP service and application quality. Network operators use the Brix System to guarantee the successful launch and ongoing, profitable operation of their various IP services.

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EXFO is certified ISO 9001 and attests to the quality of these products. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. EXFO has made every effort to ensure that the information contained in this specification sheet is accurate. However, we accept no responsibility for any errors or omissions, and we reserve the right to modify design, characteristics and products at any time without obligation. Units of measurement in this document conform to SI standards and practices. In addition, all of EXFO's manufactured products are compliant with the European Union's WEEE directive. For more information, please visit www.EXFO.com/recycle. Contact EXFO for prices and availability or to obtain the phone number of your local EXFO distributor.

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